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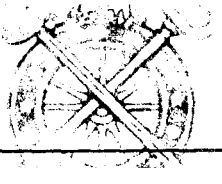
FM 21-20

WAR DEPARTMENT FIELD MANUAL

PHYSICAL TRAINING



WAR DEPARTMENT • *JANUARY 1946*

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WAR DEPARTMENT FIELD MANUAL

FM 21–20

This manual supersedes FM 21–20, 6 March 1941; TC 87, 17 November 1942; and WD Pamphlet No. 21–9, 1 May 1944.

PHYSICAL TRAINING

WAR DEPARTMENT • JANUARY 1946

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FM 21–20, Physical Training, is published for the information and guidance of all concerned.

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BY ORDER OF THE SECRETARY OF WAR:

DWIGHT D. EISENHOWER
Chief of Staff

OFFICIAL:
EDWARD F. WITSELL
Major General
Acting The Adjutant General

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CHAPTER 1

INTRODUCTION

1. PURPOSE AND SCOPE. This manual contains ready reference data for use in planning physical training programs for troops. The contents consist principally of brief descriptions and illustrations of various types of physical training activities. There are also suggestions on the planning and administration of physical training programs to fit various conditions and on effective physical fitness testing.

2. TOTAL MILITARY FITNESS. Total fitness for war includes technical fitness, mental and emotional fitness, and physical fitness. All of these attributes of total military fitness must be combined in the well trained soldier. If any are lacking, the soldier's combat effectiveness suffers proportionately. Without technical fitness a soldier lacks the knowledge and skill to fight; without mental and emotional fitness he lacks the incentive and desire to fight; without physical fitness he lacks the strength and stamina to fight.

3. IMPORTANCE OF PHYSICAL FITNESS. a. Military leaders have always recognized that the effectiveness of fighting men depends to a large degree upon their physical condition. War places a great premium upon the strength, stamina, agility, and coordination of the soldier because victory and his life are so often dependent upon them. Warfare is a grueling ordeal for soldiers and makes many severe physical demands upon them. To march long distances with full pack, weapons, and ammunition through rugged country and to fight effectively upon arriving at the area of combat; to drive fast-moving tanks and motor vehicles over rough terrain; to make assaults and to run and crawl for long distances, to jump into and out of fox holes, craters, and trenches, and over obstacles; to lift and carry heavy objects; to keep going for many hours without sleep or rest—all these activities of warfare and many others require superbly conditioned troops.

b. The fact that warfare has become mechanized has accentuated rather than minimized the importance of physical fitness. Soldiers must still perform most of the arduous tasks which fighting men for thousands of years have had to do. There are always places where mechanized units cannot maneuver,

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tasks which they cannot accomplish, and situations in which equipment becomes disabled. Furthermore, the machines are no better than the men operating them. Every new advance in the speed, maneuverability, striking power, durability, and destructiveness of our machines must be accompanied by a corresponding improvement in the quality and fitness of their operators.

c. Physical fitness is important from another point of view. A close relationship exists between physical fitness and mental and emotional fitness or morale. Fatigue, weakness, lack of stamina, and physical exhaustion are usually associated with a low state of morale. The rugged, tough, well-conditioned soldier has a feeling of fitness and confidence, and he is much less susceptible to many of the factors which undermine morale.

4. COMPONENTS OF PHYSICAL FITNESS. a. Freedom from disease and defect. Freedom from anatomical defect or disease, the discovery and treatment of which are functions of the medical department, is the first requirement of physical fitness. Physiological soundness, however, does not in itself constitute physical fitness; it is merely the foundation upon which physical fitness is built. Before a soldier is fit for combat operations good health and the absence of handicapping defects must be supplemented by strength, endurance, agility and coordination.

b. Strength. *(1)* Every soldier must have sufficient strength for the heaviest tasks he may encounter in routine and emergency activities. Arduous military duties require a considerable degree of leg, back, abdominal and arm and shoulder girdle strength.

(2) Muscles increase in size and strength with regular and strenuous exercise. They atrophy and grow weaker when not exercised. Strength is best developed in muscles when their power of contracting is challenged by maximum loads. The closer a muscle works to its capacity load, the greater will be its development of strength. Strenuous conditioning exercises, rifle and log exercises, weight lifting, wrestling, and sprint running are excellent strength-developing activities.

c. Endurance. Every soldier needs enough endurance to go through the most rigorous day without undue fatigue and to complete the most strenuous duty to which he may be assigned. There are two types of endurance:

(1) Muscular endurance. This type of endurance permits an individual to continue strenuous activity for many hours without undue fatigue. The soldier needs muscular endurance to make long marches, to keep going for hours on end, and to perform the fatiguing duties of battle. Muscular endurance is characterized by a greater than average amount of muscular strength and an enriched blood capillary network within the muscles. This network makes it possible for the blood stream to deliver increased amounts of oxygen and nutrition to the muscle mass, and to carry away waste products more rapidly.

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The kinds of exercise needed to build up muscular endurance are the same as those indicated under strength.

(2) Circulo-respiratory endurance. This type of endurance is required for prolonged activity at more than normal speed, such as long distance running. The soldier needs circulo-respiratory endurance when he must cover a considerable distance at great speed. It is composed of muscular endurance plus an increased efficiency in the functioning of the heart, vascular system, and lungs. Running is the best way to develop circulo-respiratory endurance.

d. Agility. Agility is characterized by an ability to change direction and the position of the body in space with great rapidity. It enables the soldier to fall to the ground or leap to his feet quickly; it makes him a fraction of a second faster at ducking into a fox hole or into a trench under sudden machine gun fire; it is of great value in hand-to-hand fighting. This important constituent of physical fitness is best developed by conditioning exercises which require extensive and rapid changes of position, and by such activities as tumbling, sports and games and combative activities.

e. Coordination. Coordination is the ability to integrate all parts of the body into efficient, purposeful effort. In the well coordinated individual, superfluous movements are eliminated, precision and accuracy are increased, energy is conserved, and endurance increased.

5. NECESSITY FOR PHYSICAL TRAINING. The physical fitness required of the soldier can be acquired only through physical training. The performance of purely military exercises such as drill and marching, is not alone sufficient to bring the soldier up to the desired standard of physical fitness. Experience has demonstrated that few recruits enter the Army physically fit for the arduous duties ahead of them. The softening influences of our modern machine civilization make the problem of conditioning men more important than ever before. Within the Army itself labor-saving devices and mechanized equipment exert the same debilitating effect. If troops are to be brought up to the desired standard of physical fitness, a well-conceived plan of physical training must be an integral part of every training program. In no other way will the soldier be adequately prepared for the strenuous duties associated with military service.

6. RESPONSIBILITY FOR PHYSICAL TRAINING. a. Unit commanders are responsible for the physical condition of their men just as they are responsible for all other aspects of their training. For this reason it is essential that company, battery and squadron commanders be cognizant of the importance of physical fitness and the activities and methods by which it is attained.

b. Commanding officers themselves must take part regularly in the physical training activities. With the welfare of his organization and all his men dependent upon him, no commanding officer can afford to be lacking in

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physical fitness. Besides, his participation invariably results in better physical training programs. His presence inspires the men to their very best efforts. If the commanding officer delegates the leadership of physical training to another officer or non-commissioned officer his presence will bring forth their best efforts.

7. IMPORTANCE OF PROPER CONCEPT OF PHYSICAL FITNESS. a. If there is a proper concept of physical fitness, the physical training program will be directed toward the total conditioning of all the men. Since physical fitness includes strength, endurance, agility and coordination, it is apparent that no one activity is sufficient for its full development. Marching is a splendid conditioning activity, but it alone is not sufficient for the conditioning of troops because it does not adequately develop abdominal, arm and shoulder girdle strength, agility, coordination, or the type of endurance which is called for in running. Supplementary exercises are required if total physical conditioning is to be achieved.

b. The quality of a unit is determined by the over-all picture of physical condition and total military fitness of *all* its members. It is more important that all men in a unit receive the benefits of a balanced and well directed program of physical training than that a few members achieve record performances. The physical training program, therefore, is directed toward the total conditioning of *all* men.

8. OBJECTIVES OF THE PHYSICAL TRAINING PROGRAM. The primary purpose of a physical training program is to develop and maintain a high level of physical fitness among the troops. However, while attaining this fundamental purpose, other valuable outcomes may be obtained.

a. It is possible to develop through physical training many basic military skills which are essential to personal safety or to effective performance in combat operations. Swimming, running, jumping, vaulting, climbing, crawling, both with and without equipment are basic skills which should be taught to or further developed in all soldiers. Maneuverability, alertness, and ability to anticipate may be the means of saving a soldier's life and these can be developed through boxing, wrestling, and other competitive activities.

b. Teamwork, aggressiveness, confidence, resourcefulness, a will to win, unit solidarity, and the ability to think and act quickly under pressure are other valuable products of the well conducted program of physical training.

c. Recreation is another important objective of physical training provided it can be accomplished without sacrificing the physical fitness value of the program. Interesting and enjoyable physical activities not only provide a desirable diversion in the daily routine, but they also motivate men to participate more enthusiastically in the total physical training program.

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9. SCOPE OF THE PHYSICAL TRAINING PROGRAM. a. A wide variety of activities is available. These activities vary as to their values, limitations, interest, and facilities and equipment required. Those locally responsible must choose the activities best suited to the needs of the man being trained, and to the conditions at hand. The activities treated in this manual include:

Conditioning exercises
Rifle exercises
Log exercises
Guerrilla exercises
Marching, running and grass drills
Obstacle and confidence courses
Strength course
Tumbling
Athletics
Relays
Combative activities
Swimming
Posture training

b. Many military and work activities also contribute to the development of physical fitness. While these activities are not included in the physical training program they must be considered as the program is planned (see par. 33a (3)).

10. TIME ALLOTMENT FOR PHYSICAL TRAINING. a. The low level of physical fitness of most recruits now entering service makes it necessary to devote more time to their conditioning than was formerly required. A daily period of at least 1 hour (1½ hours is recommended when training schedules permit) is required for this purpose until the troops acquire satisfactory condition. This will usually take from 10 to 15 weeks, depending upon the condition of the men at the outset. Once attained, a high level of fitness can be maintained on a somewhat reduced daily schedule when necessary, provided the time allotted for this purpose is properly used.

b. It is the unit commander's responsibility to ascertain that the time allotted to physical training is effectively used for that purpose. The complexities of modern warfare require so much technical training that all too frequently there is a tendency to subordinate physical training to other training activities. The utilization of physical training time for other training activities, or for routine military duties, is an unsound and unwise practice.

11. HYGIENIC CONSIDERATIONS. a. Mental and Emotional Health. *(1)* Physical health cannot be dissociated from mental and emotional health. Ill health is almost as often due to conditions of the mind and emotions resulting in bodily ailment as it is due to purely physical causes. Therefore, some consideration must be given to mental and emotional as well as physical hygiene.

(2) A healthy state of mind is characterized by cheerfulness, confidence and interest. An unhealthy state of mind is characterized by indifference, discouragement, worry, and a feeling of inferiority which may be due to lack

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of success or progress. Physical training can help to develop healthy mental states if:

(a) The instructor is a worthy example to his men.
(b) The instructor has an understanding, fair, and sympathetic attitude.
(c) Work is interesting and varied.
(d) Work is arranged to result in gradual and progressive development.
(e) Individual physiological differences are considered.

b. Personal Habits. Proper personal habits, such as cleanliness, proper eating, rest, and elimination should be stressed during instruction in physical training. The matter of a well-balanced diet is of particular importance. Many men increase their weight to such an extent that their physical condition is impaired. Proper diet is as important as exercise in improving the physical condition of men who are considerably overweight.

c. Scheduling the Program. *(1)* Physical training periods should not be scheduled for at least one hour *after* meals. After exercise at least 30 minutes should elapse before meals. It has been established that moderate exercise before breakfast is not harmful. However, the men should not begin with extremely vigorous running or strenuous conditioning exercises immediately after rising. If exercises are begun in a gradual manner, a vigorous activity period can be engaged in before breakfast without harmful results. In fact, in very hot climates, the best time to exercise is before breakfast. However, at least 30 minutes should elapse after exercising before the men eat breakfast.

(2) The question is often raised as to the best time of the day for the physical training period. Since muscle cells do not recognize time, it is immaterial from the physiological standpoint when exercise is taken so long as it does not interfere with digestion. Where there are not enough physical training facilities and equipment for all units to use simultaneously, the physical training periods for various organizations should be distributed at different hours throughout the day if possible. If it is necessary to schedule all organizations at the same hour the last period of the afternoon is best since it enables the men to bathe immediately after the exercise. Objection is raised to this late afternoon physical training period on the ground that the men will be fatigued from their duties of the day and will be in no condition to put forth their best efforts. It has been found, however, that a change of activity invigorates the men. It has been repeatedly demonstrated that the troops begin exercising in a fatigued condition and finish an hour later feeling considerably refreshed.

d. Exercise in high temperature. Strenuous physical activity can be performed in extremely hot temperatures if men are given an opportunity to become acclimated to the heat and if they consume a sufficient quantity of salt and water. It is essential that physical training programs be continued in hot

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climates because men can better withstand high temperature when they are well conditioned.

e. "Warm-Up". It is a fundamental physiological principle that the men should be "warmed up" gradually before engaging in strenuous exercise. The conditioning drills (see par. 48) are arranged to provide a "warm up." The men should double-time to the exercise area whenever possible.

f. "Cooling Off". Upon finishing exercise, the men should be left mildly active, walking or performing some other muscular activity, until their respiration and temperature have returned to normal. In cool or cold weather, additional clothing should be worn. The men should never be allowed to cool down too rapidly.

g. Uniform. *(1)* The uniform worn will depend upon the season of the year and the state of the weather. At no time should a uniform be worn which does not admit of the freest possible movement of the body.

(2) Whenever practicable the men should dress in undershirts and shorts. Under favorable circumstances it is recommended that undershirts be removed. If fatigue uniforms are worn, the jackets should be removed for exercise where weather permits.

h. Age. In combat, where severe physical demands are made upon the troops, all men, regardless of their age, must have the strength, stamina, agility and coordination to meet the situation. When individuals pass 30 years of age, it becomes increasingly difficult for them to reach and maintain a high level of physical fitness. Ample evidence is available that this can be done. But these men must work harder, longer, and more conscientiously at conditioning themselves; they must practice hygienic health habits; and they must learn how to conserve themselves.

i. High Altitude. Certain problems are encountered in conditioning soldiers who are stationed in high altitudes. Physiologists have shown that under such conditions the heart undergoes greater exertion during exercises. It is particularly important that only light exercises be given in the early days of residence at such altitudes. Troops become physiologically adjusted to high altitudes within a few weeks by means of adaptation of the blood circulatory mechanism. After this has occurred, they may take a progressively greater amount of exercise. The amount and intensity of exercise which can be given safely is governed by the degree of respiratory distress, which should not exceed the limit for low altitudes.

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CHAPTER 2

CONDUCT OF THE PHYSICAL TRAINING PROGRAM

Section I. LEADERSHIP

12. THE LEADER. The success or failure of the physical training program depends upon the quality of its leadership. The best results in a conditioning program can be obtained only if men are motivated to extend themselves completely in strenuous physical activities and to make every effort to perform all exercises in the prescribed form. Only the best leadership can inspire men to cooperate to this extent. For these reasons only the best qualified men in the unit should be selected to conduct instruction in physical training.

13. ESSENTIAL LEADERSHIP QUALITIES. **a.** The most essential quality of the physical training leader is the possession of abounding energy and enthusiasm. Physical training activities, if they are to be successful, must be carried on in a continuously snappy, vigorous manner. Whether or not they are depends upon the leader. The men invariably reflect his attitude whether it be enthusiastic or apathetic.

b. The enthusiasm of the leader springs from the realization of the importance of his mission. He must be inspired by the thought that what he does every minute of every day may mean the difference between victory and defeat on the battlefield, and between life and death of some of the men with whom he is working.

c. The instructor must have complete mastery of his subject matter. Not only must he be able to explain and demonstrate all activities but he must know the best methods of presenting and conducting them. Mastery of subject matter is the first step in developing confidence, assurance and poise. The well-prepared, confident leader gains the respect and cooperation of the men at the outset. The unprepared, hesitant instructor loses the confidence and respect of his men almost immediately. It should be noted that the subject matter involved in physical training has become so extensive that special training is required to master it.

d. Successful leadership in physical training requires that the instructor understand human nature. He must appreciate the individual physical and

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mental differences of the men with whom he is working. He must learn to know his group as individuals and he must be quick to recognize the signs which indicate their reactions to his instruction. The better he understands his men, and the more he can see the physical training program from their point of view, the more his instruction will succeed.

e. No instructor can be successful unless he has the confidence of his men. He gains their confidence by commanding their respect. He wins their respect by his sincerity, his integrity, determination, his sense of justice, his energy, self-confidence, and force of character.

f. The personal appearance and physical qualifications of the instructor are related to his effectiveness as a leader. He should exemplify the things he is seeking to teach. It is a great advantage if the leader himself can do all and more than he asks of his men. He must be physically fit because physical training leadership is so strenuous that considerable strength, endurance, coordination and agility are essential prerequisites for successful work.

14. MOTIVATION. A successful physical training program requires the full cooperation of all the men. Physical training activities must be done accurately and intensively if they are to be of value. It is a simple matter to malinger if an individual chooses to do so. Since it is impossible to force troops to exercise properly every effort must be made to motivate them to do so. The most successful methods of motivation are indicated below:

a. All soldiers must be "sold" upon the necessity of being in excellent physical condition. The leader must convince the men that a high level of physical fitness will give them a much better chance to survive in combat situations. When troops realize that their efforts are an investment in their own personal welfare it is not difficult to secure their wholehearted cooperation.

b. One of the best methods of motivating participation in the more formal physical training activities is to combine them with athletics. Conditioning exercises, guerrilla exercises, grass drills, log exercises, and running are activities about which soldiers are not particularly enthusiastic, but they will engage in them conscientiously and vigorously if they are followed by stimulating, competitive sports and games. Even though men realize the value of the purely conditioning activities they need the additional incentive to continue to put forth their full efforts over a long period of time.

c. To introduce competition into the more formal conditioning activities is desirable. Groups may compete against each other to determine which performs the exercises with the best form, or which executes the most repetitions of the exercises in a definite period of time.

d. Commanding officers themselves may provide one of the best incentives by participating in the physical training program. When troops feel that their commanders believe in physical conditioning to the extent that they

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themselves regularly engage in the activities, they are motivated to greater effort. In addition, troops invariably develop a greater esprit de corps and respect for their officers.

e. The use of the cumulative count (see par. 23) motivates participation in conditioning exercises. When men know how many repetitions of each exercise they have done they are challenged to equal or exceed it on succeeding days. The cumulative count thus serves as a self-testing device by which men compete against their own previous performances.

f. The frequent use of the men as assistant leaders serves as an incentive to many of them. They work hard for this honor and they usually respond well to the responsibilities. The use of mass cadence is also very helpful in making the men feel a part of the program.

g. Another method of motivation is physical efficiency testing. Many men are powerfully motivated to improve their condition when physical liabilities are revealed to them by the testing program. Others feel challenged by the tests and strive to improve their score on the next one. Men compete against each other to show the greatest improvement. Some commanding officers offer incentives to those men with the best records. Others deny certain privileges to those men who have test scores considerably below the average. All of these devices serve to stimulate interest and participation in the physical training program.

h. There is no more effective method of obtaining the energetic, wholehearted participation of the men in the physical training program than by providing skilled leadership. A leader who is admired and respected by his men has no difficulty in securing their cooperation. The good leader informs his men of the value of the different activities and the reasons for their inclusion in the program. He treats his men with consideration and does not impose unreasonable physical demands upon them. If men are exercised too violently, they become so stiff and sore that they look upon the next physical training period with apprehension. The men develop an antagonistic attitude toward the instructor and the program, and instead of cooperating they will malinger at every opportunity.

15. LEADERSHIP TECHNIQUES. a. Unless the instructor experiences all the exercises himself, he cannot appreciate how arduous they are, what movements are most strenuous and difficult, where the errors of performance are likely to occur, and what the proper cadence should be.

b. The instructor must commend good performance as quickly as he censures bad. Most men respond well to deserved praise. Whenever an individual performs an activity with exceptionally good form or results, it is a good idea to ask him to demonstrate it before the group. It is particularly important that the leader praise the less skillful performers when the occasion merits. The instructor must be able to distinguish between poor performance caused by

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lack of ability or aptitude on the part of the soldier and poor performance caused by indifference or lack of effort. He should treat the first with patience and understanding, the latter with firmness; he must *never* apply sarcasm and ridicule. The judicious exercise of a sense of humor is often helpful.

c. To carry on an effective daily program, leaders will find it necessary to prepare a detailed outline of the daily activities. Even the most experienced leaders find it helpful to review the materials to be covered. No instructor should refer to notes or to a card during the course of the physical training period. He should memorize them. Every instructor must be thoroughly prepared before he is given the responsibility of a group.

d. The heavy demand upon the physical training instructor's voice can be lightened by using assistant instructors to count cadence. Mass cadence will achieve the same result.

e. The men should never be kept too long in one position, especially a constrained one. No exercise should ever be performed a greater number of times than can be accomplished without loss of proper form. The instructor must be uncompromising in regard to the form in which all conditioning exercises are executed. Even slight deviations from the proper form will greatly reduce the value of the exercise.

f. Long explanations should be avoided. As a rule, it should be necessary to give a full explanation of new exercises only. The most essential features of an exercise should be explained first. Details may be added later. Too many details at one time are more likely to confuse the men than to assist them. All minor corrections should be made to the entire class while the exercise is in progress (for example, "heads up," "knees straight,"). If necessary, this direction may be followed by the name of the man who is particularly at fault. If a man requires special attention, he should be given separate instruction by one of the assistant leaders to avoid wasting the time of the remainder of the group.

g. Instructors should employ a positive rather than a negative approach in making corrections and giving demonstrations. It is much more effective to say "keep your knees straight" than "don't bend your knees." It is always better to demonstrate correct rather than incorrect form of an exercise or activity.

h. Instructors must create among their men the desire to be fit. A very effective method of accomplishing this is to explain to them the reason and military value of the physical training activities. When troops understand the necessity for being fit and the reasons for what they are doing, they will want to be fit. Such an attitude is essential to a successful program.

i. The instructor must exercise careful supervision of all the men. It is well that he participate in the exercises on occasions to show that he can perform them. When he does, however, his assistant instructors should supervise because it is difficult to supervise and participate at the same time.

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16. FORMALITY vs. INFORMALITY. a. When extreme formalism is insisted upon in physical training, the chief objective is discipline rather than physical fitness. The best results are obtained in physical training when the men participate in the activities with vigor, enthusiasm, and satisfaction. When the period is conducted in a rigidly formal manner, however, the spirit and enthusiasm of the men are suppressed.

b. Conditioning exercises must be conducted so that they impart the utmost physiological benefit. Accuracy and precision of performance should be required unconditionally whenever their attainment is possible. But this insistence upon accuracy and precision of performance should be aimed at giving the men the maximum physical benefit from the exercises and should not be employed for purely disciplinary purposes. Some instructors emphasize the disciplinary aim to the extent that they give only those exercises which lend themselves readily to a snappy military performance, thereby neglecting the more complex and more beneficial exercises in favor of the simpler and less beneficial ones. Some degree of discipline must be observed, however, if the instructor is to maintain precision and control.

17. SIZE OF THE CLASS. For most efficient instruction, the class should be limited in size to one platoon. This size also permits maximum control by the instructor. The practice of one instructor leading an entire battalion or regiment in physical training is not conducive to effective results. Constant supervision is necessary and it is inevitable that the accuracy and perfection of the exercises are diminished when the number of men exceeds one platoon. Much better results will be attained if four platoons exercise separately rather than together.

18. ASSISTANT LEADERS. a. Even though the size of the group is limited to one platoon, assistant leaders are needed to give additional supervision and to assume charge in the leader's absence. These assistants must be the most capable leaders in the platoon. It is important that they participate in the exercises while they supervise the men in their vicinity. In the circle formation, each assistant leader assumes responsibility for a segment of from 8 to 10 men.

b. Assistant leaders can be of further help by counting cadence for the instructor. When the instructor teaches new exercises, he usually uses one or several of his assistants to demonstrate them. While exercises are being performed in cadence, the assistants constantly set the pattern of the proper form for the men to follow.

c. Assistant instructors perform all lateral movements to the same side as the group. If the men are bending to the left, the assistants (if facing the men) bend to the right, so that their movements are in the same direction as those of the men.

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19. IN SERVICE TRAINING. One of the difficulties of exercising in smaller groups is that more leaders are required. It is best that each platoon contain four or five men competent to conduct the physical training activities. These men should participate in an in-service training program before being utilized as leaders. Great care should be exercised in the selection of these leaders. A time must be arranged when men selected as leaders can meet with the officer-in-charge for instruction and practice in the prescribed activities. The training must include, in addition to mastery of all the exercises, actual practice in leading. Well selected individuals can become effective leaders with 20 to 25 hours of such in-service training.

Section II. PHYSICAL TRAINING COMMANDS

20. THE IMPORTANCE OF COMMANDS. The importance of proper commands in conducting the physical training program cannot be overestimated. Invariably, the performance directly reflects the command. When the command is given distinctly, concisely, with energy and snap, and with proper regard to rhythm, the performance will reflect the command. A lifeless, slovenly and disorganized performance results from a careless and indifferent command. For instructions on the use of the voice in giving commands, see FM 22–5.

21. KINDS OF COMMAND. a. Preparatory commands and commands of execution. There are two kinds of military commands, the preparatory command and the command of execution. The preparatory command describes and specifies what is required and the command of execution calls into action what has been prescribed. All preparatory commands must be given with a rising inflection. The interval between commands should be long enough to permit the average man to understand the first command before the second command is given.

b. Commands for held positions. When conditioning exercises are introduced to a new group, they should be taught by *command*. This will give the instructor an opportunity to check each position of every man and assure that everyone acquires the proper form at the outset. There are two methods of instruction by command:

(1) In the first method, there is a *preparatory command* describing what is to be done, a *pause,* and then a *command* of execution. The command of execution shall be a verb, for example, "Trunk forward bend, MOVE."

(2) The second method of teaching new exercises by command is "by the numbers." In this method, a number is given to each position which is to be taken. The proper position is assumed when the number is called. The preparatory command is "By the numbers," and the command of execution is the numbers.

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c. Commands for continued exercises. After the men have had several days' experience with the exercises, the instructor needs merely to indicate what the exercise is, command the men to assume the starting position, and start them exercising in cadence. The leader's commands are as follows:

The first exercise is the HIGH JUMPER.

1. Starting Position, 2. MOVE.

1. In Cadence, 2. EXERCISE—One, two, three, *one;* One, two, three, *two*; etc., etc.

Whenever the command "Starting Position, MOVE" is given, it must be prefaced with a statement of the name of the exercise which is to be done.

d. Commands of discontinuation. (*1*) To discontinue an exercise performed rhythmically or in cadence, the command HALT is given in place of the last numeral (for example, ONE, TWO, THREE, HALT.) To prepare the men for this command, all numerals in the final repetition should be spoken with a rising inflection. In exercising with large groups, it is helpful if the instructor raises his right hand just before the last repetition.

(*2*) After the men are halted, they are put at ease or at rest. In the early stages of training, they may be given a rest after each exercise or they may be placed at ease to listen to further explanation by the instructor. After a week, however, the rests should be gradually eliminated and the men should remain at ease between exercises only long enough for the instructor to indicate the next exercise and to give the command "Starting Position, MOVE."

(*3*) In the late stages of training, to intensify the conditioning exercises, the practice of having the men assume the at ease position momentarily between exercises may be discontinued. By going immediately from the position in which the men have been halted to the starting position of the next exercise, the command "AT EASE" can be eliminated.

22. COUNTING CADENCE. a. When the exercises are carried on in rhythmic cadence, the instructor or his assistant counts out the cadence. Each count coincides with the *end* of a movement in the exercise. It is important that when the men begin exercising in cadence that they start the first movement of the exercise on the command "EXERCISE" rather than to wait for the count "ONE."

b. The counting is used not only to indicate rhythm or cadence; it also indicates the manner in which each movement of an exercise is performed. Through proper use of these commands, long explanations are avoided and the instructor is able accurately to indicate the tempo and quality of the movements. When a movement needs to be done slowly, the instructor draws out the count. If any particular movement is to be performed with more energy than the others, the numerals corresponding to that movement should be emphasized by a louder and more staccato count.

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23. CUMULATIVE COUNT. a. A cumulative count is a method of indicating the number of repetitions of an exercise on the fourth numeral of a four-count exercise, or the eighth numeral of an eight-count exercise, Thus: 1-2-3-*1*: 1-2-3-*2*: 1-2-3-*3*: 1-2-3-*4*: etc. In the case of an eight count exercise the cadence would be: 1-2-3-4-5-6-7-*1*: 1-2-3-4-5-6-7-*2*: etc.

b. The use of the cumulative count is strongly recommended for the following reasons:

(1) It provides the instructor with an excellent method of counting the number of repetitions which have been performed.

(2) It enables the leader to make the exercises progressive from day to day and week to week.

(3) It serves as a self-testing and motivating device. Men like to know how much they are expected to perform. They want to continue to show improvement.

(4) It provides a means of prescribing an exact amount of exercise for any group, even when conducted by untrained personnel.

(5) When large groups exercise together the cumulative count makes it possible to adapt the amount of exercise to men of different levels of physical fitness.

24. MASS COMMANDS. a. The use of mass commands under appropriate circumstances is strongly recommended.

(1) Mass commands assist greatly in overcoming individual diffidence and timidity and in developing confidence, self-reliance, assertiveness, enthusiasm and proficiency.

(2) It is possible to give large masses the benefit of individual instruction since each man becomes virtually his own instructor. The principal advantage is that each man is made to rely upon his own initiative and intelligence. He must learn not only to give the commands properly but also how to perform correctly the movement required by the commands.

(3) Each individual is required to give the commands as if he alone were giving them to the entire unit. As a result, the volume and "smash" of the combined voices literally impel each man to extend himself to the limit in performing the movements with snap and precision. Coordination and a sense of cadence are also developed.

(4) Mass commands teach the proper cadence of an exercise, when to accentuate, emphasize or drawl a count, and how to convey by proper intonation, the way a movement is to be performed.

(5) Mass commands develop the voice.

(6) Mass commands may serve the valuable function of developing group exercise leaders.

b. The following example indicates the recommended method of employing mass commands for conditioning exercises:

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Instructor: 1. Call the Platoon to the Starting Position of the SQUAT BENDER. 2. COMMAND.

Mass: 1. Starting Position. 2. MOVE.

Instructor: 1. Execute the Exercise, AT YOUR COMMAND. 2. COMMAND.

Mass: 1. In Cadence. 2. EXERCISE—One, two, three, *one,* etc., etc.

c. To discontinue an exercise with mass commands, the instructor signals by raising his right arm just before the beginning of the last four-count repetition. On this signal, the mass will count, with a rising inflection: ONE, TWO, THREE, HALT. If a definite number of repetitions of each exercise is established in advance, no signal is necessary to terminate the exercise.

d. Mass commands are not recommended until the men have participated in the conditioning exercises several times.

25. INTRODUCING CONDITIONING EXERCISES. a. When introducing conditioning exercises to a new group, it is advisable to take the men through the exercises step by step during the first few periods. If the proper habits of performing the exercises are developed at the outset, time and effort need not be expended later in eliminating bad habits. There are four different steps involved in introducing conditioning exercises.

(1) Explanation and demonstration by the instructor or his assistant "by the numbers."

(2) Demonstration of the exercises at regular cadence by the instructor, an assistant instructor, or a member of the class.

(3) Participation of the group "by the numbers." The men hold the positions on each count while corrections are made by the instructor and assistants.

(4) Group participation in the exercises at regular cadence.

b. Following is an example of these four steps with the first conditioning exercise, the HIGH JUMPER:

FIRST STEP

At Ease.

The first exercise is the HIGH JUMPER. It is a four-count exercise. In the starting position, the feet are 12 inches apart (demonstrate), the arms are extended toward the rear (demonstrate), the knees are bent slightly (demonstrate). On the count of *One,* swing the arms forward shoulder high and jump upward several inches (demonstrate). On the count of *Two,* jump upward and return the arms to the original position (demonstrate). On the count of *Three,* leap into the air about 12 inches, swinging the arms forward and overhead vigorously (demonstrate). On the count of *Four,* jump into the air swinging the arms to the rear to the starting position (demonstrate).

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SECOND STEP

In cadence, this exercise is performed as follows:

1. Starting Position, 2. MOVE.

1. In Cadence, 2. EXERCISE—One, two three, *one,* one, two, three, *two,* etc., etc. (Instructor or assistant demonstrates.)

THIRD STEP

In the starting position, the feet are one foot apart, the knees are bent, the arms are extended to the rear.

1. Starting Position. 2. MOVE. (Instructor and assistants check individuals in the group and make necessary corrections.)

On the count of ONE swing the arms forward shoulder high and jump upward several inches. ONE. (Instructors and assistants check all men in the group and correct them if necessary.)

On the count of TWO, jump upward and return the arms to the original position, TWO. (Instructors and assistants again check.)

On the count of THREE, leap into the air about 12 inches, swinging the arms vigorously forward and overhead. THREE. (Instructor and assistants again check all men.)

On the count of FOUR, jump upward and return the arms to the original position. FOUR. (Instructor and assistants again check.) It may be desirable to go through the exercise again by the numbers if the men seem to have difficulty with it.

FOURTH STEP

1. In Cadence. 2. EXERCISE—One, two, three, *one,* etc.

c. It should be reemphasized that the above procedure is to be used *only* when the conditioning exercises are introduced to men unfamiliar with them or when men are performing the movements poorly and require corrections.

Section III. PHYSICAL TRAINING FORMATIONS

26. SQUARE OR RECTANGULAR FORMATION. The traditional formation for carrying on physical training activities is the square or rectangular formation. This formation is more compact than any other. It is the best type to employ for large numbers of men because it is simple, easy to assume, and may be applied with equal facility and promptness to any unit. Its chief disadvantage is that it does not lend itself well to certain activities such as guerrilla exercises and grass drills. It has a further disadvantage in that proper supervision of all men is difficult.

a. The square or rectangular formation is assumed from a column of three's or four's, at close intervals between squads. This column faces the instructor who commands:

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(1) To extend the men:

(a) 1. Extend to the Left, 2. MARCH. At this command the men in the right flank column stand fast, with arms extended sideward. All other men turn to the left and run forward at double time, to the original left. Men in the center column of a 3-squad unit, or men in the right center of a 4-squad unit, take two paces. Men in the left column of a 3-squad unit, or men in the left-center column of a 4-squad unit, take four paces. Men in the left column of a 4-squad unit take six paces. After taking the required number of steps, all men face the front with arms extended sideward. The distance between fingertips is about 12 inches.

(b) 1. Arms Downward, 2. MOVE. At this command the arms are lowered smartly to the side.

(c) 1. From Front to Rear, 2. COUNT OFF. At this command the leading man in each column turns his head to the right rear, calls off one and faces the front. Successive men in each column call off in turn, two, three, four, five, etc., in the same manner.

(d) 1. Even Numbers to the Left. 2. UNCOVER. At this command each even-numbered man stride-jumps sideward to the left, squarely in the center of the interval. In doing this, he swings his left leg sideward and jumps from his right foot to his left foot, smartly bringing the right into position against the left.

(2) To assemble the unit:

1. Assemble to the Right. 2. MARCH. At this command, all return to their original position in the column on the double.

b. A modification of this exercise formation is strongly recommended if more space is available. It is executed in a manner similar to the formation in *(a)* above except for an additional extension of the men. This has the effect of spacing the men in depth as well as laterally. Since more space is provided between the men, this formation is adaptable for guerrilla exercises, grass drills, and combative events. The commands for this elongated square or rectangular formation are as follows:

(1) To extend the men:

(a) 1. Extend to the Left, 2. MARCH.

(b) 1. Arms Downward, 2. MOVE.

(c) 1. Right, 2. FACE.

(d) 1. Extend to the Right, 2. MARCH.

(e) 1. Arms Downward, 2. MOVE.

(f) 1. Left, 2. FACE.

(g) 1. From Front to Rear, 2. COUNT OFF.

(h) 1. Even Numbers to the Left, 2. UNCOVER.

(2) To assemble the unit, the instructor commands:

1. Assemble To The Right, 2. MARCH. At the command MARCH, all return to their original positions in the column on the double.

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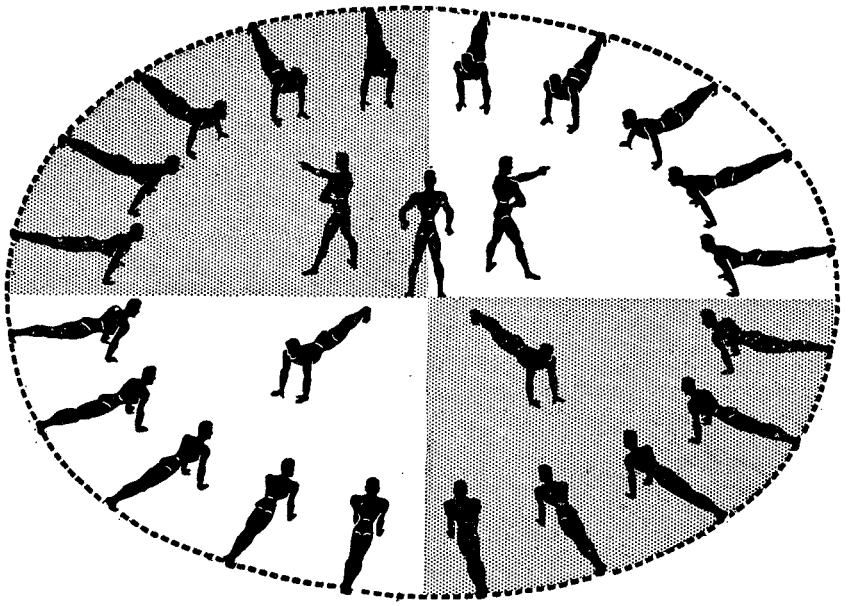
c. An additional method of extending the men is to select a middle file and command:

1. Extend To The Right and Left From the Center File. 2. MARCH. This center file might be clearly designated by having each man raise his right arm. At the command of execution the men on the right of the center file extend to the right and those on the left extend to the left. This method of extending will help distribute the men evenly before an exercise platform.

d. The square or rectangular formation should be elongated if men are to perform grass drills and combatives. For combatives the first file faces the second file; the third file faces the fourth; the fifth file the sixth, etc.

27. CIRCLE FORMATION. a. The circle formation is effective for carrying on conditioning exercises. It has the advantage that the supervision of all



men is facilitated. This is particularly true if sub-leaders are used inside the circle. Their function is to see whether the men in their segment of the circle are performing the exercises properly. The sub-leaders participate in all the exercises except when they are correcting or assisting the men. Guerrilla exercises, grass drills, running and combative events are more easily conducted in the circle formation than in the square formation.

b. It is not advisable to have more than 60 men in a single circle. If more men must be accommodated, separate circles or concentric circles should be used. As many as 300 to 400 men may be formed in 6 or 7 concentric

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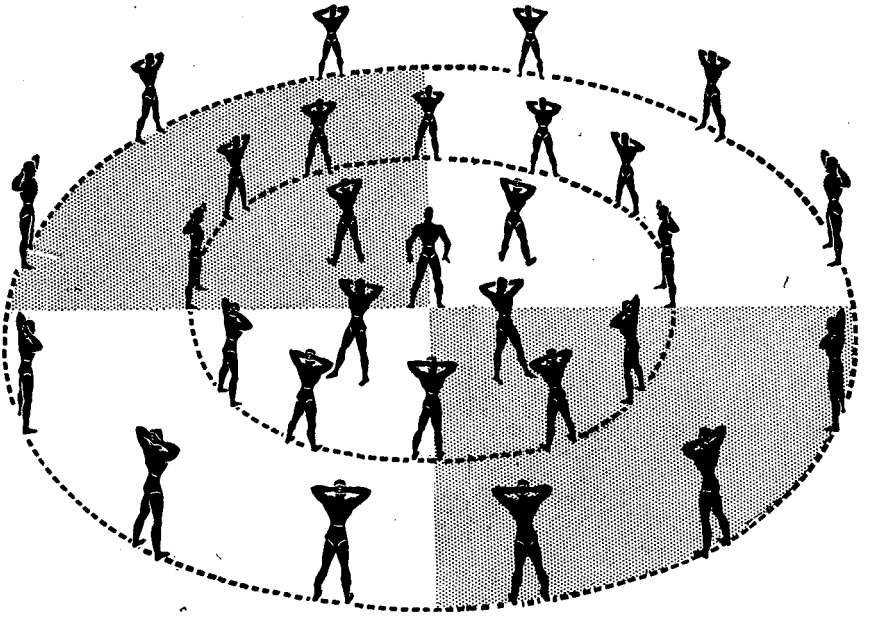

circles. Better results will be obtained, however, if the men are arranged in 6 or 7 separate circle formations.

c. If a platoon is to form a circle, the simplest and quickest method is to command the men to "join hands and form a circle." A more formal command is: 1. Circle Formation, 2. MARCH. Upon this command, the right flank column moves forward at double time with the leader gradually describing a circle. Each succeeding file falls in behind that on the right. After the rough outline of the circle has been formed, the intervals between the men may be made uniform by having the men grasp hands after they have been halted and faced toward the center.

d. If concentric circles are to be formed, the different circles are made by designated platoons and squads. Each additional circle requires more men than the one inside it. For example, 3 squads may form the inner circle, a platoon the next circle, 5 squads the next, and 6 or 7 squads the outer circle.

28. PROVISION FOR DIFFERENT LEVELS OF PHYSICAL CONDITION.

a. Providing for different levels of physical condition is particularly recommended in the early stages of the conditioning program. Older men and men in poor physical condition should be expected to attain a high level of physical fitness but they should be given a longer time in which to do it.

(1) One simple method of providing for the difference in levels of phys-

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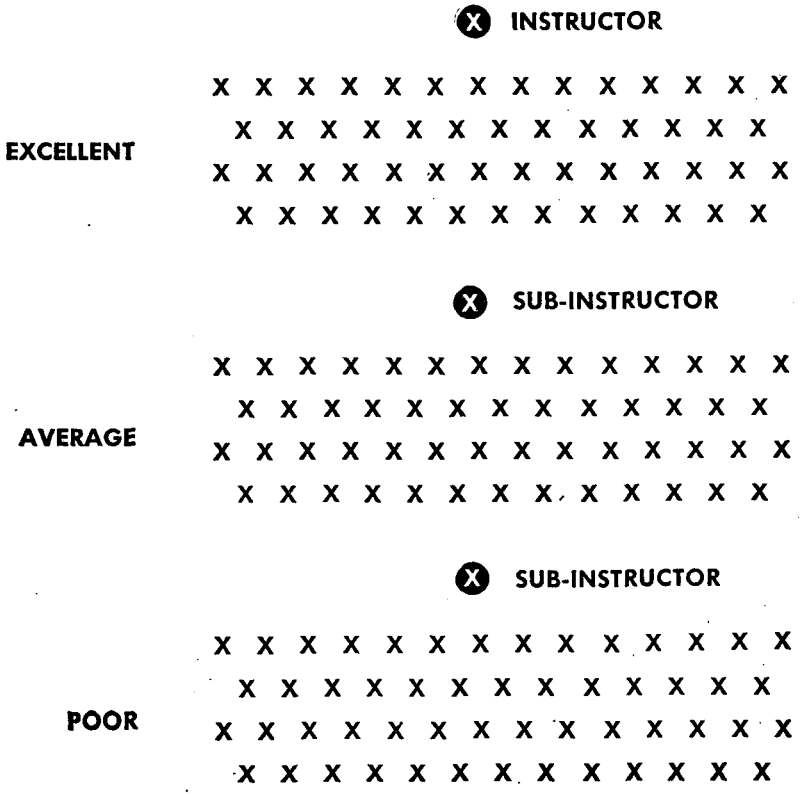
ical condition is to group the men according to their condition. A two group classification would divide men into "highly fit" and "average" groups. A finer classification could be obtained by dividing the men into three groups —a highly fit, a moderately fit and an unfit group. The segregation of men into different exercise groups should be based upon their physical fitness test scores or upon the level of condition which they demonstrate in the physical training activities. They may also be grouped initially according to their age. A common classification by ages is under 30, 30 to 34 and 35 and above. All groups should be required to attain eventually a high level of physical fitness.

(2) Another method of segregating the men may be employed in the square or rectangular formation. The men may be classified into 3 groups on the basis of their physical condition—excellent, average, and poor. As the men assemble for their exercises the highly fit group should be nearest to the instructor, the average group next, and the least fit group last. They should be arranged so that a double interval separates each of the three groups as follows:



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b. Before starting each exercise, the instructor indicates the number of repetitions the different groups are to perform. Thus, if he indicates 12, 10, and 8 repetitions, the poor group ceases exercising after it has performed 8 repetitions. The average group stops after 10 repetitions. Each group will know when to stop if the instructor uses the cumulative count.

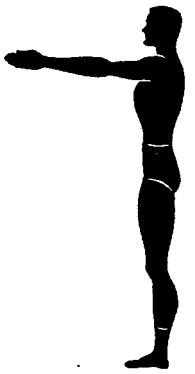
The sub-instructor for each group raises his right hand just prior to the last repetition. As soon as a group ceases to exercise, its men stand at ease.

Section IV. POSITIONS

29. POSITION OF ATTENTION AND RESTS. For detailed descriptions of the position of attention, of the various rests, and of the commands used to bring men to these positions, reference is made to FM 22–5.

30. STARTING POSITIONS. a. When a set drill of conditioning exercises is employed, the men assume the proper starting position of each exercise at the command: 1. Starting Position, 2. MOVE. At the finish of the exercise they are commanded to return to either the position of attention or to the at ease position. However, if exercises are to be given in addition to those in the set drills, the commands below may be used to place the men into the proper starting positions and to return them to the original position at the conclusion of the exercise. These commands may also be used where all men are to assume the starting position of a set drill exercise in exactly the same manner. For example, if an exercise in a set drill is performed in the supine position the men will all assume the position on the ground in a uniform manner at the command: 1. Position on Back, 2. MOVE. At the command: 1. Starting Position, 2. MOVE, the men assume the proper starting position of the exercise.

(1) 1. Arms Forward, 2. MOVE. At the command MOVE, raise the arms to the front. Extend them smartly to their full length till the hands are in front of and at the height of the shoulders. Keep palms facing, fingers extended and together, and thumbs along the index fingers. Return arms to the starting position at the command: 1. Arms Downward, 2. MOVE.



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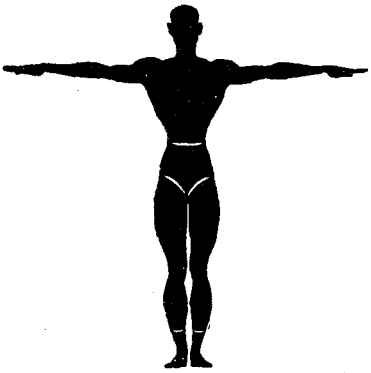

(2) 1. Arms Sideward, 2. MOVE. At the command MOVE, raise the arms laterally until horizontal. Keep palms down, fingers extended and together, and thumbs along the index finger. Return arms to the starting position at the command: 1. Arms Downward, 2. MOVE.

(3) 1. Arms Overhead, 2. MOVE. At the command MOVE, bend both elbows at sides and then extend arms vertically overhead. Keep the backs of the hands turned outward, fingers extended and together, and thumbs along index finger. Return arms to the starting position at the command: 1. Arms Downward, 2. MOVE.

(4) Arms may be *swung* to overhead position in either of two ways. If the command is: 1. Arms Forward Upward, 2. MOVE, swing arms forward to the overhead position. If the command is: 1. Arms Sideward Upward, 2. MOVE, swing arms sideward to the overhead position. In either case the palms are facing. Return to the starting position at the command: 1. Arms Forward (Sideward) Downward, 2. MOVE.

(5) 1. Arms To Thrust, 2. MOVE. At the command MOVE, raise the forearms to the horizontal. Force elbows back. Keep upper arms against the body, hands tightly closed, knuckles outward, and thumbs upward. Return arms to the starting position at the command: 1. Arms Downward, 2. MOVE.

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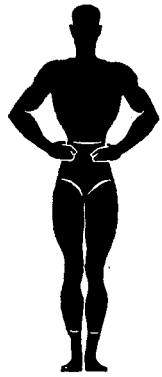
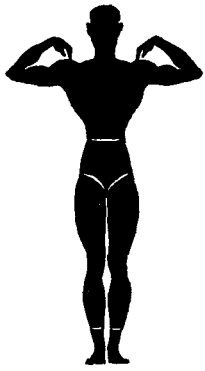
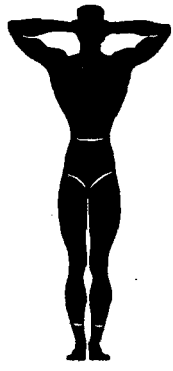
. *(6)* 1. Hands On Hips, 2. MOVE. At the command MOVE, place hands on the hips. Fingers are extended and joined, pointing to the front; thumbs point to the rear. The crotch formed by the thumb and forefinger rests just above the hip bone. Return arms to the starting position at the command: 1. Arms Downward, 2. MOVE.





(7) 1. Hands On Shoulders, 2. MOVE. At the command MOVE, raise the elbows outward until the upper arms are horizontal. Bend the wrists and place the tips of the fingers lightly on the shoulders. Return to starting position at the command: 1. Arms Downward, 2. MOVE.



(8) 1. Lace Fingers Behind Head, 2. MOVE. At the command MOVE, raise elbows outward until upper arms are horizontal and lace fingers behind the lower portion of the head. Keep elbows well up and pressed back. Return to starting position at the command: 1. Arms Downward, 2. MOVE.

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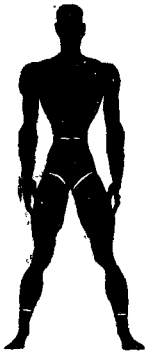

(9) 1. Side Straddle Position, 2. MOVE. At the command, MOVE, jump and at the same time separate the legs so that the feet are planted about 30 inches apart. The toes should strike the ground first and the position assumed without jar. In the final position, the legs are straight and the body erect. At the command: 1. Position Of Attention, 2. MOVE, return to the starting position. Some position of the hands is usually assumed simultaneously with the assumption of the side straddle position. A typical command is: 1. Side Straddle Position, Hands On Hips, 2. MOVE.

(10) 1. Full Knee Bend Position, 2. MOVE. At the command MOVE, bend the knees fully and open them outward so that each knee points 45° to the oblique. Keep heels close together and arms downward, or to the position commanded. Return to the starting position at the command: 1. Position Of Attention, 2. MOVE.

(11) 1. Squat Sitting Position, 2. MOVE. The starting position is feet 1 foot apart, and toes turned out 45°. At the command MOVE, bend the knees fully, keeping the heels on the ground, and bending forward enough to keep balance. Extend arms forward. Keep palms facing and thumbs up. Return to position of attention at the command: 1. Position Of Attention, 2. MOVE.

(12) 1. Squatting Position, 2. MOVE. At the command MOVE, bend knees fully and open legs outward so that each knee points 45° to the oblique. At the same time place both hands flat on the floor 6 inches in front of the feet and about 15 inches apart. Keep fingers spread and to the front, arms straight and head up. Return to starting position at the command: 1. Position Of Attention, 2. MOVE.

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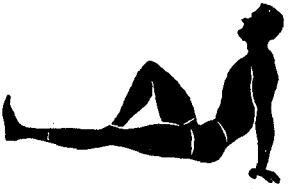
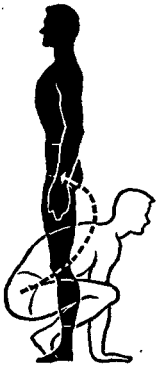


(13) 1. Position On Back, 2. MOVE. At the command MOVE, squat down on right foot, with left leg forward, until seated with hands on ground behind hips. Then lie backward to a supine position. The feet are together. Return to the starting position at the command: 1. Position Of Attention, In Four Counts, 2. MOVE. At the command MOVE, arise in four counts; (a) sit up and place both hands about a foot behind hips; (b) turn to the right to a front leaning rest position. (See *(16)* below.) (c) Recover to a squatting position. (d) Rise to the standing position with a jump and a half turn left.

For a more informal rise, use the command: 1. To Your Feet, 2. MOVE. At this command the men arise as quickly as possible to their feet in any way they desire.



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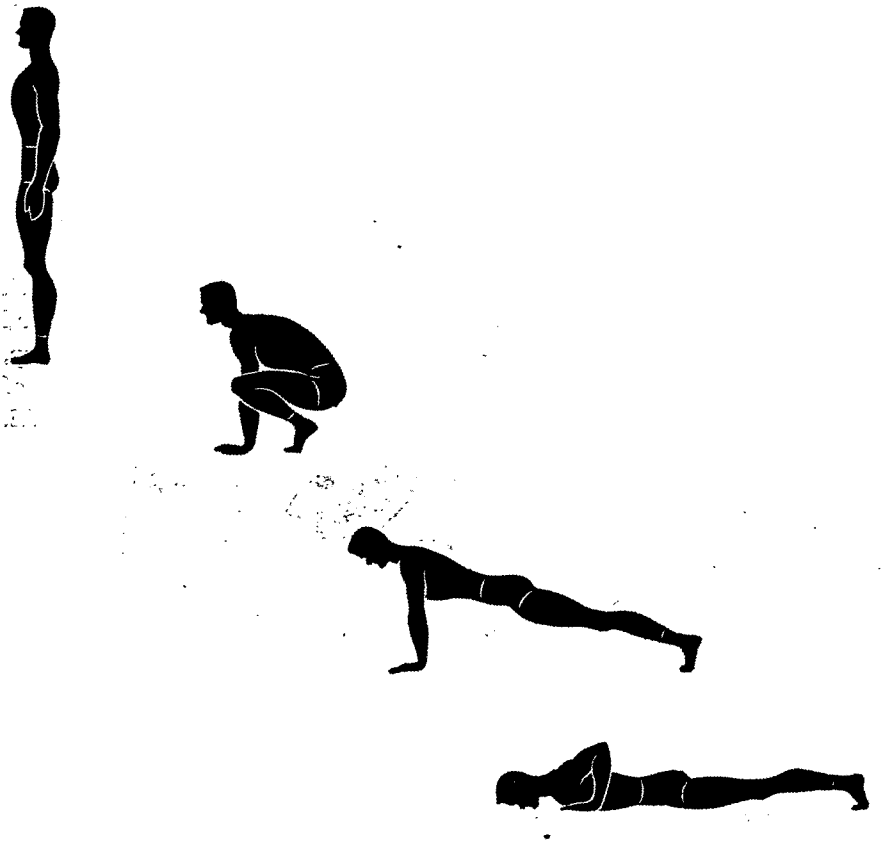
(14) 1. Prone Position, 2. MOVE. At the command MOVE, squat down, thrust legs back to a front leaning rest position, then lie down to a prone position with hands beneath shoulders. The feet are together. The position of hands may subsequently be changed by command. Return to position of attention in reverse order at the command: 1. Position Of Attention, 2. MOVE.



(15) 1. Sitting Position, 2. MOVE. At the command MOVE, squat down on right foot, with left leg forward, until seated with hands on ground beside buttocks. Extend right leg forward alongside the left. At the command: 1. Position Of Attention, 2. MOVE, arise as from position on back *((13)* above).

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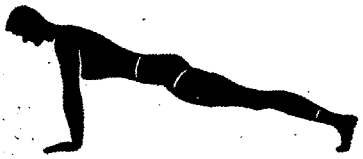
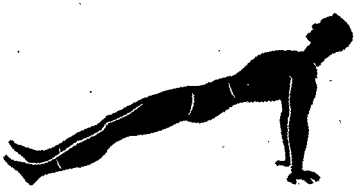
(16) 1. Front Leaning Rest, 2. MOVE. At the command MOVE, squat down. Thrust legs backward to position of rest on hands and toes. Keep face downward, arms vertical and body straight from shoulders to heels. Return to position of attention at the command: 1. Position Of Attention, 2. MOVE.



(17) 1. Back Leaning Rest, 2. MOVE. At the command, MOVE, sit down as in (13) above. Place both hands about a foot behind hips and raise hips until body is straight from shoulders to heels. Keep the face up, and arms vertical. The feet are separated about 12 inches. The position of attention is resumed at the command: 1. Position Of Attention, 2. MOVE. Arise as from position on back (see *(13)* above).



(18) 1. Forward Leaning Position, 2. MOVE. At the command MOVE, bend trunk forward at the hips about 45°. The bend is only at the hips. Keep back straight and the head erect. Return to the position of attention at the command: 1. Position Of Attention, 2. MOVE.

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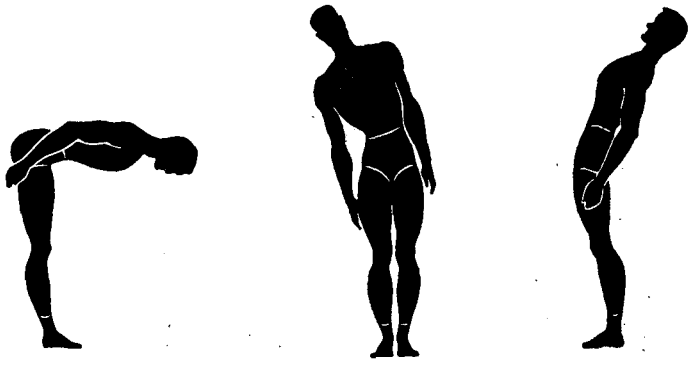
(19) 1. Bend Trunk Forward (Sideward, Backward), 2. MOVE. Bend the *whole spine;* not the hips alone. Return to the position of attention at the command: 1. Position Of Attention, 2. MOVE.



(20) 1. Turn Trunk To Left (Right), 2. MOVE. At the command MOVE, twist the trunk to the left (right) above the hips. The hips usually move also, but the major twist is in the spinal column. Return to the position of attention at the proper command.

(21) 1. Turn And Bend Trunk To Left (Right), 2. MOVE. This command should be given only after the side straddle position has been taken. At the command MOVE, *turn* the trunk to the left (right), and then bend forward over the left (right hip). Keep knees straight. The position of attention is resumed at the proper command.

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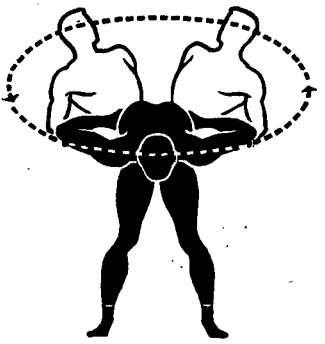
(22) 1. Rotate Trunk To Right (Left), 2. MOVE. This movement is executed from side straddle position with hands on hips. At the command MOVE, bend the trunk forward, and then circumscribe a cone, starting to the left (right). Continue until the command HALT. Then return to the erect position. Return to the position of attention at the proper command.



(23) 1. *Curl* Trunk Forward, 2. MOVE. This exercise always starts from a position on the back. At the command MOVE, lift the head and shoulders, first the head and then the chest, until the spine above the bottom ribs is off the ground. Hands are usually on fronts of thighs. Return to the position on back at the command: 1. Position On Back, 2. MOVE.

b. The terms "bounce", and "pull" are used to describe repetition of a movement preceded by a slight relaxation, where there is no return to the previous position. The term "bounce" is used for sideward or downward movements, such as side bends or front bends. It may be used for vigorous arm movements. The term "pull" is used for *slow,* corrective arm movements.

c. The positions described in **a** above should be practiced frequently. Instead of recovering to the position of attention each time, the instructor may change directly from one position to another by giving the proper commands. Thus, to change from the position in (7) above to that in (6) above, having commanded: 1. Hands On Shoulders, 2. MOVE, he directly commands: 1. Hands On Hips, 2. MOVE, instead of first commanding: 1. Arms Downward, 2. MOVE.

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CHAPTER 3

PROGRAM PLANNING AND CONSTRUCTION

31. IMPORTANCE OF PROGRAM PLANNING. A physical training program is as good as the planning behind it. Physical training must be planned to achieve a certain goal and the selection of activities of every period must be based upon what has gone on before and what is intended in the future. Only in this way is progression possible and a balanced program assured.

32. BASIC PRINCIPLES OF PHYSICAL CONDITIONING. There are two basic principles which should be constantly kept in mind in any conditioning program:

a. Moderate beginning and gradual progression. The program should begin with moderate amount of exercise and increase gradually and steadily. The average man can be put into good physical condition in about 12 weeks. Nothing is gained by giving the men so much activity during the first week or 10 days of the conditioning program that they suffer unduly from muscular soreness, stiffness, or exhaustion. Such a practice causes the men to develop an unfavorable atttitude toward the activities and results in a tendency to perform the exercises improperly. Because such habits are so difficult to eradicate, every effort should be made to avoid their development.

b. The overload principle. (*1*) The amount of muscular development resulting from exercise is in direct proportion to the demand made upon the system. Under a moderate amount of exercise the muscles develop just enough to care for that amount of work easily. If there is no further increase in the amount of exercise demand, there will be no further improvement in function or increase in strength and endurance. If an individual does less exercise than he is accustomed to, he will deteriorate in strength and endurance. If he wishes to improve he must make a heavier demand upon the organism. The nearer the exercise approaches the limits of one's present ability, the greater will be the development. This is known as the "overload principle".

(2) The implication of the "overload principle" for physical training is that the dosage of activity must be gradually increased and the men must be pushed to their upper limits if they are to gain top condition. There is no easy road to the attainment of excellent physical condition. The exercises

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must be strenuous and participation must be continued "until it hurts." The leader must take cognizance of this fact and not be diverted from his task because of the minor aches and pains which the men will inevitably experience.

c. These principles of beginning gradually and of overload, appear to be the antithesis of each other but in reality they are not in conflict. In the early stages of training a moderate amount of exercise is usually enough to "overload" the existing performance abilities of the men. They must, therefore, be given a reasonable amount of activity during the first few weeks. The instructor should be careful not to work his men too hard but he should provide sufficient activity to give them a moderate workout. After this period the program should be gradually intensified.

33. CRITERIA FOR SELECTION OF ACTIVITIES. The criteria for selecting activities to be included in the physical training program for a specific organization are:

a. Needs of the Troops. *(1)* The first step in planning a physical training program for a specific organization is to determine the physical fitness needs of the members of that organization. This will depend upon two factors.

(a) The first factor is the present level of physical fitness of the men. This can be readily determined by a physical fitness test.

(b) The second factor is the level of physical fitness desired for the troops in question. Standards are available for this purpose (See Table III). The physical fitness needs of the men are represented by the difference between their present status and the level of condition which they should acquire.

(2) Men engaging in sedentary activities should maintain a moderate level of physical fitness. This can be done without the expenditure of much time. Not only will the men feel better physically and be better prepared for any emergency which might occur but the quality and quantity of their work will be improved.

(3) Consideration must be given to the physical activities which the troops engage in outside the physical training period. Many of their military and work activities contribute to the development of physical fitness. When such duty activities develop certain aspects of physical fitness the physical training program should be modified accordingly. In engineering organizations, for example, heavy work activities will develop strength and muscular endurance. Physical training in such organizations should stress activities which develop circulo-respiratory endurance, agility, and coordination. The recreational aspect of the program and the development of special skills should also be emphasized.

b. Facilities and Equipment. *(1)* It is obvious that consideration cannot be given to activities which require facilities and equipment which are not avail-

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able. Swimming cannot be included in the program unless facilities are available. Many athletic activities will have to be excluded for the same reason. Rifle conditioning exercises cannot be performed by those organizations which do not have rifles.

(2) The lack of facilities and equipment should not serve as an excuse for a narrow, restricted program. Many activities can be adapted to the facilities and equipment at hand. Certain facilities and equipment can be improvised. Finally, the lack of facilities and equipment should serve as a challenge to procure them in some manner.

c. Time. The time available for physical training will govern to some extent the nature of the program. If only 30 minutes a day are allotted for physical training, the activities must be very intensive to obtain maximum physical benefits. Continuous conditioning exercises, strength course, guerrilla exercises, wind sprints, and other types of running probably serve best. For any longer period, sports and games are increasingly stressed. If the time available extends over 60 minutes, the entire program is less intensive and includes a considerable amount of athletics.

d. Weather. The weather exerts a marked effect upon the activities selected. Snow, mud, and extreme cold weather decidedly limit activities which can be carried on outdoors. If the weather forces the program indoors the activities presented depend upon the facilities available.

e. Interests of the Men. A physical training program cannot be successful unless the cooperation and energetic participation of the men is obtained. One of the most effective methods of eliciting cooperation is to include popular activities such as sports and games, swimming, combatives, and relays. That does not mean limiting the program to just those activities which the men like, but it does mean introducing a certain amount of them from time to time.

f. Stage of Training. In general, conditioning exercises, running guerrilla exercises, and grass drills are emphasized in the early stages of training and athletics and games in the latter stages. These stages are discussed more fully in paragraph 34.

34. STAGES IN THE CONDITIONING PROGRAM. There are three different stages in the conditioning program. These are:

a. The Toughening Stage. During this stage, which lasts approximately from 1 to 2 weeks, the men go through a period of muscular stiffness, soreness, and recovery. This stage is always encountered when poorly conditioned individuals exercise vigorously. The severity of this stage depends upon the physical condition of the individuals and the amount of activity they take.

b. The Slow Improvement Stage. This period lasts from 6 to 10 weeks, depending upon the physical condition and age of the men. The improvement is fairly rapid at first but becomes progressively slower.

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c. The Sustaining Stage. The men reach a peak beyond which they appear to show little improvement. The problem is to maintain them at this level (par. 39).

35. DEVELOPING PHYSICAL FITNESS. a. In developing physical fitness there is no way of avoiding the toughening and slow improvement stages. The men must undergo them, but during the first few days great care must be observed to avoid over-exercising. It is always safe to assume that recruits will all be in poor physical condition. It is imperative, therefore, that the program commence with a very light dosage of activity and increase gradually. During the early stages, the entire program should be devoted to conditioning exercises and running. Not only do these activities serve as a foundation for the conditioning program but they are also the most easily controlled. In the first 2 weeks emphasis is placed upon developing good form in executing the exercises. The men are provided with opportunities to rest during the explanations and demonstrations. Additional rest periods between exercises are also recommended. Five or six repetitions of each conditioning exercise is the proper dosage for the first few days of physical training. The amount of activity is gradually increased until in the twelfth week, 16 repetitions of each exercise represents a normal workload.

b. With five or six 50-to-60-minute periods a week it is possible to bring poorly conditioned men up to a high level of physical fitness in a period of approximately 12 weeks. This can be done, however, only if the Physical Training Program is properly planned and scheduled. A carefully worked out model schedule is recommended below. (See par. 36.)

36. A MODEL SCHEDULE. a. In the model schedule below (See Table I), conditioning exercises are emphasized predominantly during the first half of the 12 week period. The reason for this is that the various forms of conditioning exercises are the basic, fundamental conditioning activity which reach and develop all parts of the body. It is recommended that from 40 to 45 minutes a day be devoted to this type of activity during the first few days of the training program and a total of at least 350 minutes during the first 2 weeks. Large amounts of time are needed to teach the men the proper way of performing the exercises. Conditioning exercises must be done with accuracy and perfection if their full value is to be realized. This calls for careful explanation, demonstration, and practice. The leader should check and recheck his men constantly in this early stage. All of these things are time-consuming but they will pay dividends later. Further, many of the men will need the rests thus afforded.

b. After the first heavy emphasis upon conditioning exercises, the time devoted to them is gradually reduced. Sixty minutes per week of conditioning

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exercises spread over at least 3 days is sufficient to maintain the condition of the men after they have reached a high level of fitness—providing, of course, they participate in other physical training activities such as sports and games. Conditioning exercises should never be eliminated entirely from the conditioning program. If athletic activities are supplemented by these conditioning exercises, no important muscle group will be neglected.

c. Because log exercises, strength courses, and rifle exercises accomplish the same purpose as conditioning exercises they are excellent substitutes and should be used from time to time for variety. While the strength course requires a considerable amount of equipment, much of it can be made of salvage materials.

d. Guerrilla exercises are excellent supplementary activities to conditioning exercises. They are exceedingly rigorous, and 10 minutes devoted to them provide a strenuous workout. A time allotment of 5 or 10 minutes per day is the recommended dosage when these activities are scheduled.

e. Grass drills are additional conditioning exercises. If executed properly, they are extremely strenuous and even well-conditioned men cannot continue them very long. Five minutes is the recommended time to devote to grass drills.

f. Running is the best single conditioning activity for developing endurance and should be used every day. It is recommended that the men double time to and from the exercise area. In addition, a definite amount of time should be allotted to running activities each period. Five minutes of short sprints is recommended, particularly in the early stages of the conditioning program. As the men become better conditioned this time can be increased. More time is required for engaging in obstacle course or cross country running. Occasionally it may be desirable to spend the entire period in such running. The time for running as such may be modified if other activities involving running such as sports and relays are employed.

g. Combative events are strenuous activities which involve the element of competition. Because of this competitive factor, men will put in more effort than they ordinarily do in conditioning exercises. The time to devote to combatives varies from 10 to 30 minutes, depending upon the type used. A longer period should be used when hand-to-hand fighting skills are being taught. A 5-minute time allotment is not recommended because most of the time would be consumed in organizing the men and getting them started. One 10-minute period is better than two 5-minute periods. This same statement applies to relays.

h. Men usually lose interest in relays after 15 to 20 minutes of participation. Ten to fifteen minutes is considered the best time allotment for this type of activity. Relays should not be conducted every day. Two or three times a week is recommended.

TABLE I

RECOMMENDED 12-WEEK SCHEDULE—WEEKLY TIME ALLOTMENT

	MONDAY	MIN.	TUESDAY	MIN.	WEDNESDAY	MIN.	THURSDAY	MIN.	FRIDAY	MIN.
1st WEEK	Cond. Ex.	45	Cond. Ex.	45	Cond. Ex.	45	Cond. Ex.	45	Cond. Ex.	45
	Running	5	Running	5	Running	5	Running	5	Running	5
2nd WEEK	Cond. Ex.	35	Cond. Ex.	35	Cond. Ex.	35	Cond. Ex.	35	Cond. Ex.	35
	Guerr.	10	Guerr.	10	Guerr.	10	Guerr.	10	Guerr.	10
	Running	5	Running	5	Running	5	Running	5	Running	5
3rd WEEK	Cond. Ex.	30	Cond. Ex.	30	Cond. Ex.	25	Cond. Ex.	25	Cond. Ex.	25
	Guerr.	10	Guerr.	10	Guerr.	10	Guerr.	10	Guerr.	10
	Grass D.	5	Grass D.	5	Grass D.	5	Grass D.	5	Grass D.	5
	Running	5	Running	5	Running	10	Running	10	Running	10
4th WEEK	Cond. Ex.	25	Cond. Ex.	25	Cond. Ex.	25	Cond. Ex.	25	Cond. Ex.	25
	Guerr.	5	Guerr.	5	Guerr.	5	Guerr.	5	Comb.	15
	Comb.	15	Grass D.	5	Comb.	10	Grass D.	5	Running	10
	Running	5	Comb.	10	Running	10	Relays	15		
			Running	5						

Legend

Cond. Ex.	*Conditioning Exercises*
Guerr.	*Guerrilla Exercises*
Grass D.	*Grass Drills*
Comb.	*Combatives*
Rifle Ex.	*Rifle Exercises*
Log Ex.	*Log Exercises*
CC	*Cross Country Running*
OC	*Obstacle Course*

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TABLE I—cont'd

	MONDAY	MIN.	TUESDAY	MIN.	WEDNESDAY	MIN.	THURSDAY	MIN.	FRIDAY	MIN.
5th WEEK	Cond. Ex.	25	Cond. Ex.	25	Cond. Ex.	25	Cond. Ex.	25	Cond. Ex.	25
	Guerr.	5	Guerr.	5	Guerr.	5	Guerr.	5	Guerr.	5
	Grass D.	5	Comb.	15	Grass D.	5	Comb.	15	Grass D.	5
	Relays	10	Running	5	Relays	10	Running	5	Relays	10
	Running	5			Running	5			Running	5
6th WEEK	Cond. Ex.	20	Cond. Ex.	20	Cond. Ex.	20	Cond. Ex.	20	Cond. Ex.	20
	Guerr.	5	Guerr.	5	Guerr.	5	Guerr.	5	Running (OC)	30
	Grass D.	5	Grass D.	5	Grass D.	5	Grass D.	5		
	Comb.	15	Running	5	Comb.	15	Games	20		
	Running	5	Relays	15	Running	5				
7th WEEK	Cond. Ex.	20	Rifle Ex.	20	Cond. Ex.	20	Log Ex.	20	Cond. Ex.	20
	Guerr.	5	Guerr.	5	Guerr.	5	Guerr.	5	Running (OC)	30
	Grass D.	5	Grass D.	5	Grass D.	5	Grass D.	5		
	Comb.	15	Running	5	Comb.	15	Games	20		
	Running	5	Relays	15	Running	5				
8th WEEK	Cond. Ex.	15	Rifle Ex.	15	Cond. Ex.	15	Log Ex.	15	Cond. Ex.	15
	Guerr.	10	Guerr.	5	Guerr.	10	Guerr.	5	Games	15
	Grass D.	5	Comb.	10	Grass D.	5	Comb.	10	Running (CC)	20
	Running	5	Games	20	Running	5	Games	20		
	Relays	15			Relays	15				

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TABLE I—cont'd

	MONDAY	MIN.	TUESDAY	MIN.	WEDNESDAY	MIN.	THURSDAY	MIN.	FRIDAY	MIN.
9th WEEK	Cond. Ex.	15	Rifle Ex.	15	Cond. Ex.	15	Log Ex.	15	Cond. Ex.	15
	Guerr.	5	Guerr.	5	Guerr.	5	Guerr.	5	Guerr.	5
	Comb.	10	Grass D.	5	Comb.	10	Grass D.	5	Running (OC)	30
	Games	15	Relays	15	Games	15	Relays	10		
	Running	5	Games	10	Running	5	Games	15		
10th WEEK	Cond. Ex.	15	Rifle Ex.	15	Cond. Ex.	15	Log Ex.	15	Cond. Ex.	15
	Guerr.	5	Guerr.	5	Guerr.	5	Relays	15	Guerr.	5
	Running	5	Grass D.	5	Grass D.	5	Comb.	15	Running	10
	Games	25	Running	10	Games	25	Running	5	Games	20
			Games	15						
11th WEEK	Cond. Ex.	15	Rifle Ex.	15	Cond. Ex.	15	Log Ex.	15	Cond. Ex.	15
	Guerr.	5	Relays	10	Guerr.	5	Grass D.	5	Running	10
	Running	10	Running	10	Grass D.	5	Guerr.	5	Games	25
	Games	20	Games	15	Games	25	Comb.	10		
							Running	15		
12th WEEK	Cond. Ex.	15	Rifle Ex.	15	Cond. Ex.	15	Log Ex.	15	Cond. Ex.	15
	Guerr.	5	Running	10	Guerr.	5	Grass D.	5	Running	10
	Running	10	Games	25	Grass D.	5	Guerr.	5	Games	25
	Games	20			Games	25	Relays	10		
							Comb.	15		

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RECAPITULATION OF WEEKLY TIME ALLOTMENTS

	Cond. Ex.	Guerr.	Grass D.	Running	Comb.	Relays	Games	Rifle Ex.	Log Ex.
	minutes	*minutes*	*minutes*	*minutes*	*minutes*	*minutes*	*minutes*	*minutes*	*minutes*
1st WEEK	225	0	0	25	0	0	0	0	0
2nd WEEK	175	50	0	25	0	0	0	0	0
3rd WEEK	135	50	25	40	0	0	0	0	0
4th WEEK	125	20	10	30	50	15	0	0	0
5th WEEK	125	25	15	25	30	30	0	0	0
6th WEEK	100	20	20	45	30	15	20	0	0
7th WEEK	60	20	20	45	30	15	20	20	20
8th WEEK	45	30	10	30	20	30	55	15	15
9th WEEK	45	25	10	40	20	25	55	15	15
10th WEEK	45	20	10	30	15	15	85	15	15
11th WEEK	45	15	10	40	10	10	90	15	15
12th WEEK	45	15	10	30	15	10	95	15	15

i. Too many activities of a 5-minute duration should not be scheduled. The practice of having 5 or 6 activities, each with a time allotment of 5 minutes, is not recommended because the men get the feeling that they change activities before they have a chance to get started. There is always some loss of time, too, in changing from one activity to another.

j. The schedule in Table I is suggested as a guide. Circumstances vary from post to post. If the principles of program construction employed in the above schedule are understood and utilized, satisfactory adjustments and adaptations can be made to any situation. Furthermore, with this model

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schedule as a guide, the preparation of a well-rounded and beneficial physical training program suitable for different circumstances, shorter periods, or varied groups is a matter of judicious selection only.

37. DAILY PROGRAM. A detailed lesson plan must be carefully worked out for each day's program. The weekly schedules (See Table I) serve only as a general guide. The daily lesson plan must be specific and consider local factors such as facilities and equipment, climatic conditions, personnel, and time available for physical training activities. Following is a sample of a daily program in the sixth week of the recommended training schedule:

CONDITIONING EXERCISES	10 REPETITIONS OF EACH EXERCISE	*20 minutes*
GUERRILLA EXERCISES	DUCK WADDLE	*5 minutes*
	FROG JUMP	
	STRADDLE RUN	
	HOP	
	BROAD JUMP	
	INCH WORM	
GRASS DRILLS	FRONT-UP; BACK-UP	*5 minutes*
	GO-STOP	
GAMES	SPOKE TAG	*20 minutes*
	DODGE BALL	
	KEEP AWAY	

38. PROGRESSION. a. In order to have progression in the physical training program, it is necessary to know how much exercise is given from day to day. It is particularly important to know the work load of the conditioning exercises because this type of activity predominates in the first few weeks of the conditioning program. The amount of activity can be accurately determined if the same exercises are performed each day and if the cumulative count (see par. 23) is used. It is practically impossible to measure the dosage of activity with accuracy if new exercises are given every day.

b. The proper starting dosage for recruits is five repetitions of each four or eight count conditioning exercise. This number should be continued for 1 week. The repetitions are then increased 1 each week until 16 repetitions are being performed. This is the maximum number of times that each exercise should be repeated.

c. Progression in the stationary running exercise is best accomplished by increasing the time in which the exercise is performed. In the first week this

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exercise is done for 30 seconds each period. The time is increased 10 seconds each succeeding week until the men are performing the exercise for 90 seconds.

d. The program is also intensified by reducing the rest periods between exercises. During the first week, brief rest periods are provided between each exercise. The instructor usually utilizes these rest periods for explanations and demonstrations of the next exercise. After the first week, the periods are gradually eliminated. The first step is to do the exercises in pairs with brief rests only after every other exercise. Thus, exercises No. 1 and No. 2 are done in a continuous fashion, after which a brief rest period is provided. Then exercises No. 3 and No. 4 are done continuously before the next rest period. After 3 days of resting after each pair of exercises, the men rest after every third exercise. After several more days the rest comes after every fourth exercise. This reduction of rests continues until the men are able to go through the entire series of conditioning exercises in a continuous fashion.

e. Even though the time devoted to conditioning exercises becomes progressively less from week to week, the amount of exercise performed actually increases. When the men are able to go through all 12 exercises in a continuous manner, it is possible for them to perform from 12 to 15 repetitions of each of the four- and eight-count exercises in a 15-minute period.

f. Progression in the guerrilla exercises is achieved by executing the movements for a greater distance or for a longer time. They may also be intensified by performing some of the exercises at double time, by double-timing between exercises, or by going directly from one movement to the next without marching at quick time.

g. Progression in rifle conditioning exercises and log exercises is obtained in the same manner as for the basic conditioning exercises, i.e., by increasing the number of repetitions of each exercise and by reducing the rests between exercise. Grass drills are intensified by performing them for a longer period of time, at greater speed, or both. Progression in running is obtained by increasing the distance. A period of running alternated with walking may be made more intense by increasing the ratio of running to walking. Intensity in running may also be increased by setting a faster pace.

39. MAINTAINING PHYSICAL FITNESS. a. After participating for a period of from 8 to 12 weeks in a progressively more strenuous physical training program, men reach a peak of physical condition. When they have reached this peak, men must be maintained there. If they discontinue exercising even for a short time or engage in light activities, their condition will soon deteriorate. To maintain their physical fitness at a high level, troops must continue doing about the same amount of exercise.

b. It has been found almost impossible to maintain a high degree of

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interest and enthusiasm for physical training activities over a long period of time if they are predominantly conditioning exercises, guerrilla exercises, and grass drills. The most effective method of maintaining interest in the physical training program over a long period of time, is to provide a variety of athletic activities. These give the men satisfaction, pleasure, and relaxation as well as exercise.

c. It is recommended that conditioning exercises, grass drills, and guerrilla exercises continue to be included in the program during the maintenance period but to a lesser extent. These activities provide a warm-up for the sports and games and in addition reach certain muscle groups which might not be exercised by the athletic activities. Soldiers will respond well to 15 or 20 minutes of conditioning activities if they can devote 40 to 45 minutes to sports and games.

d. The athletic activities used should be of the most vigorous type. Such sports as American ball, soccer, speedball, keep-away, cage ball, basketball, goal-hi, push ball and other similar activities are recommended. Games such as baseball, softball, volley ball and shower ball should not be used in the physical training program because they are not sufficiently strenuous. Football is an excellent game for well-conditioned men but it does not lend itself to use among troops because of its intricacies and also because of the large amount of equipment required.

e. A recommended maintenance program is outlined in table II.

40. MAINTAINING PHYSICAL FITNESS ABOARD SHIP. Some provision must be made to keep troops in proper physical condition when they are enroute overseas. Many troops are required to spend more than a month aboard ship. If they are given no exercise during this period, they lose much of the high level of physical condition which they had upon embarkation. Many successful physical training programs have been carried out on transports. The principal problem is that of space. Usually a small space may be cleared for conditioning exercises, which appear to be the best type of conditioning activity to use under these circumstances. Resistance exercises have also been successfully employed. Stationary running for periods up to 5 minutes will take the place of ordinary running. If space is adequate, stationary grass drills may be used. Some transport programs have even included crude obstacle courses. By scheduling the available facilities for ½ hour intervals throughout the period of daylight, it is possible to provide an activity period for most men.

41. MAINTAINING PHYSICAL FITNESS IN COMBAT AREAS. a. A high level of physical fitness is of greatest importance when soldiers are in actual contact with the enemy. Yet this is precisely the time when it is most difficult to maintain physical condition. The best solution to this problem is to send troops against the enemy with such a high level of condition that the amount of

TABLE II

MAINTENANCE PROGRAM

	MONDAY	MIN.	TUESDAY	MIN.	WEDNESDAY	MIN.	THURSDAY	MIN.	FRIDAY	MIN.
13th WEEK	Cond. Ex.	15	Rifle Ex.	15	Cond. Ex.	15	Log Ex.	15	Games	30
	Running	5	Running	5	Running	5	Running	5	Running	20
	Games	30	Games	30	Games	30	Games	30		
14th WEEK	Cond. Ex.	15	Rifle Ex.	15	Cond. Ex.	15	Log Ex.	15	Running	20
	Running	5	Running	5	Running	5	Running	5	Games	30
	Games	30	Games	30	Games	30	Games	30		
15th WEEK	Cond. Ex.	15	Running	10	Cond. Ex.	15	Running	10	Cond. Ex.	15
	Running	5	Games	40	Running	5	Games	40	Running	5
	Games	30			Games	30			Games	30
16th WEEK	Cond. Ex.	15	Rifle Ex.	15	Cond. Ex.	15	Log Ex.	15	Running	20
	Running	5	Running	5	Running	5	Running	5	Games	30
	Games	30	Games	30	Games	30	Games	30		

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deterioration will not prove detrimental. Emphasis should be placed upon rebuilding lost condition when troops are withdrawn to the rear for periods of rest and rehabilitation.

b. Every soldier should be taught exercises which he can use himself to maintain his physical fitness in combat areas during periods of inactivity. At times these periods are so prolonged that physical fitness will be markedly reduced unless some exercise is taken. Since it is quite unlikely that the men will be able to exercise in groups, each man must be held responsible for his own fitness.

42. EVALUATING PROGRESS. To keep a constant check on the physical condition of the troops and to evaluate the effectiveness of the physical training program, physical fitness tests should be administered every 3 or 4 months. From the results of these tests the physical training officer can determine the progress of the troops in achieving physical fitness as well as whether this level of fitness is being maintained. If the maintenance program were not sufficiently strenuous or diversified and certain aspects of physical fitness were reduced, a return to the more purely conditioning activities would be necessary.

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CHAPTER 4

CONDITIONING EXERCISES

Section I. GENERAL

43. EVALUATION OF CONDITIONING EXERCISES IN THE TOTAL CONDITIONING PROGRAM. a. Conditioning exercises constitute the most extensively used activity in the Army physical training program. These selected exercises have a number of advantages: (1) they can be conducted anywhere; (2) they require no equipment; (3) they are readily adaptable to large groups; (4) they can be easily adapted to individual physiological differences; (5) they can be regulated for dosage and progression and; (6) if properly selected, they will reach and develop any desired muscle group in the body.

b. The chief disadvantage of conditioning exercises is that it is difficult to make them appealing to the men. This can be overcome by good leadership and the judicious use of supplementary activities.

44. ARRANGEMENT OF EXERCISES IN SET DRILLS. a. A "set" drill is a carefully selected and arranged group of exercises which reach and develop all important muscle groups of the body. It is to be repeated many times. By repeating the same exercises over a long period of time, it is possible to achieve greater perfection and accuracy in execution. The use of a set drill eliminates the great waste of time associated with continually presenting and teaching new exercises. A set drill also provides the best method of securing progression in dosage.

b. From the vast number of conditioning exercises available, 2 sets of 12 exercises each have been chosen. The criteria for their selection were: first, they best reach the fundamental muscle groups of the body; secondly, they are easy to learn and to perform; and thirdly, they are simple to administer and supervise. The exercises which were selected have been carefully arranged in proper sequence for the best results. It is essential that each set be performed in the order prescribed.

c. Since two of the exercises in each set are done from the supine position,

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appropriate exercises have been included as substitutes where ground conditions make it inadvisable for the men to lie down. Other substitutions are not recommended. If additional exercises are desired, they should be added to those comprising these basic sets—not substituted for them.

45. USE OF DIFFERENT DRILLS. a. Two set drills have been selected to provide variation in the program. The two drills are considered of equal value and difficulty. An organization may adopt one set and never use the other. If both sets are used, they should not be alternated from day to day, but rather one set should be used exclusively for several months before the other is introduced. Since each exercise in a set bears a relation to each other exercise in the same set, *the exercises of the two sets must not be interchanged.*

b. If further variety is desired it may be introduced by substituting rifle, or log exercises, or the strength course for the conditioning exercises, since they reach and develop approximately the same muscle groups. However, here again, substitutions must be by entire sets and not by individual exercises.

46. NECESSITY FOR PRECISION AND ACCURACY. Constant insistence upon the proper execution of each exercise is imperative since conditioning exercises lose much of their value unless performed exactly as prescribed. Considerable time and effort must be expended during the early stages to teach the exercises properly to all men. Just as much patience and time are required to obtain perfection in executing the conditioning exercises as is required to attain the same degree of skill in executing the manual of arms.

47. CONDUCTING CONDITIONING EXERCISES. a. The conditioning drill is to be done in a continuous fashion. Each exercise has been given a name. The instructor requires all men to memorize the exercises so that the conduct of the program may be facilitated. After having performed the exercises several times, the men are usually able to complete the entire set with only enough pause between exercises for the instructor to indicate the next exercise by name. This continuous method of conducting conditioning exercises greatly intensifies the work load and conserves time.

b. After the men know how to execute the exercises properly, conditioning exercises are always given in cadence. This is counted either by the instructor, by one of his assistants or by the entire group. The cadence for the different exercises varies. Where possible, these exercises should be done to the accompaniment of music.

c. Certain exercises such as push ups, squat jumps, or rowing exercises may be executed at will on occasions. The men respond well to performing these exercises in this manner. The instructor merely indicates the number of repetitions which are to be done and as soon as the men have completed this number they stand at ease.

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Section II. WARM UP DRILL

48. USE OF WARM UP DRILL. a. Warm up exercises are necessary when physical training activities are strenuous or are conducted in cool or cold weather. In general it is desirable to warm up unless vigorous activities are participated in just before the physical training period.

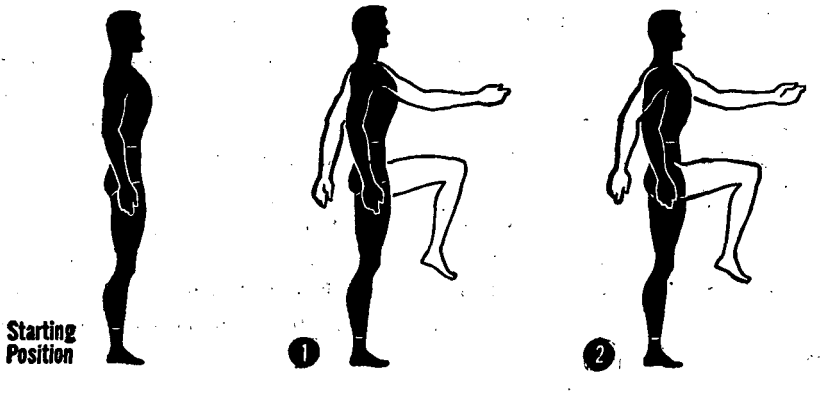
b. Wherever practicable troops should be warmed up by double timing to the exercise area. Where this is not feasible the following exercises may be used to begin the day's program. The purpose of this drill is to warm up the muscles. There should be no more repetitions than are necessary to accomplish this purpose.

EXERCISE 1: STORK WALK

Starting Position. *Attention.*
Cadence. Slow to moderate.
Movement.

(1) Raise left knee until upper leg is perpendicular to body. At same time raise right arm forward to shoulder height. Lower left leg and right arm to starting position.
(2) Repeat count (1) with right foot and left arm.
(3) Repeat count (1).
(4) Repeat count (2).

Four to six (four count) repetitions. This is a slow, powerful stationary walk. Swing the arms in a larger and larger movement until they are almost vertical on the upswing and downward and behind the hips on the downswing.



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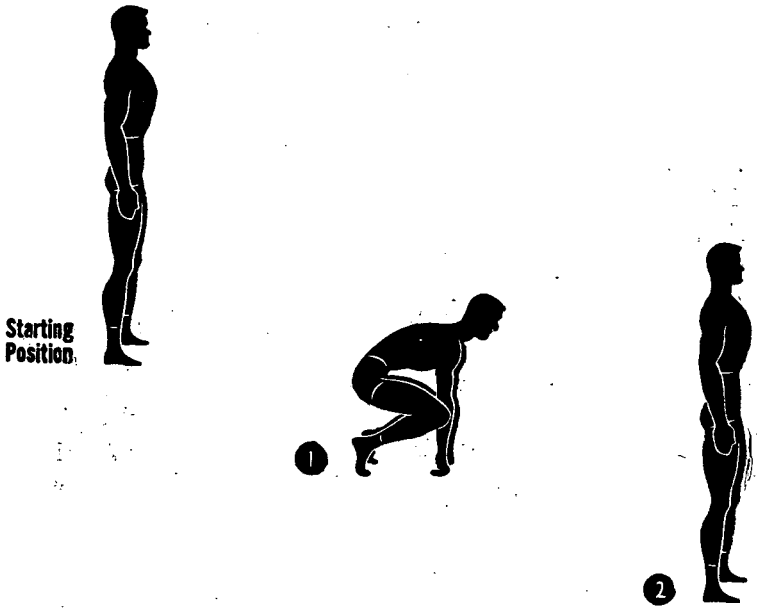
EXERCISE 2: BACKFIELD CROUCH

Starting Position. Feet apart about eighteen inches. Otherwise, at attention.
Cadence. Moderate.
Movement.

(1) Squat and touch the fingers to the ground 12 to 18 inches in front of the feet. Knees are bent, back is straight, and head is up.
(2) Recover to starting position.
(3) Repeat count (1).
(4) Recover to starting position.

Two to four (four count) repetitions.



EXERCISE 3: STATIONARY RUN

See EXERCISE 11, paragraph 49. Continue this exercise only long enough to obtain a feeling of flexibility and warmth in the muscles, usually from 20 to 40 steps. The cadence is moderate.

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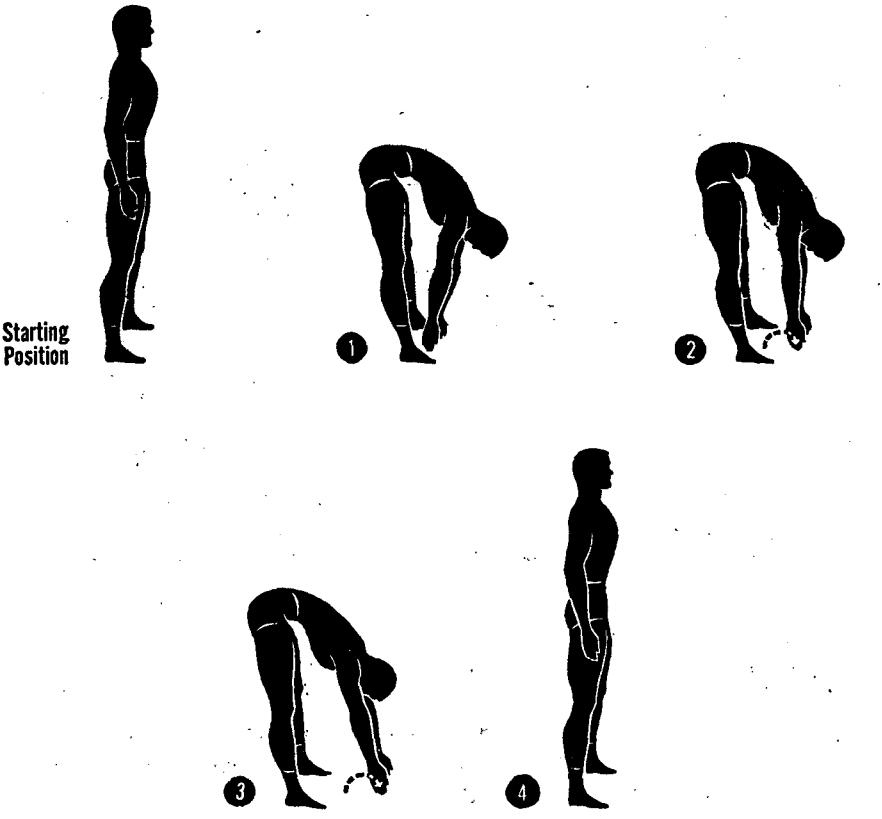
EXERCISE 4: THE BOBBER

Starting Position. Side straddle, arms at side.
Cadence. Slow to moderate.
Movement.

(1) Bend forward with knees straight and reach hands to the ground between feet.
(2) Relax slightly, then "bounce" downward again, reaching about 6 inches farther forward.
(3) Again, relax and "bounce" downward, reaching forward about a foot or more.
(4) Recover to starting position.

Four to six (four count) repetitions. In executing this exercise, go down to, but not beyond the point of straining. The flexion should be greater with each succeeding repetition until the muscles of the back and the backs of the legs have been stretched and limbered up.



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Section III. CONDITIONING EXERCISE DRILLS

49. DRILL NO. 1. a. Five repetitions of each exercise, whether it be a four or eight count exercise, constitute the starting dosage. As the strength and endurance of the soldier increases, the number of repetitions is increased one each week until a maximum of 16 has been reached.

b. Ground conditions may make some of the exercises below impracticable. Substitute exercises have been provided. These are distinguished from the regular exercises by the addition of an "A".

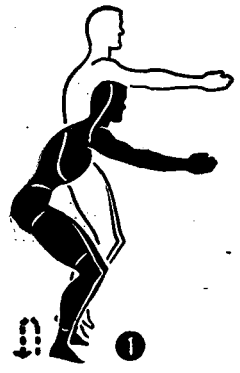
Starting Position

EXERCISE 1: HIGH JUMPER

Starting Position. Feet separated about 12 inches, knees slightly bent, body bent forward 45° at the waist, arms raised backward.
Cadence. Moderate.
Movement.

(1) Swing arms forward and jump upward a few inches.
(2) Swing arms backward and jump upward a few inches.
(3) Swing arms forward and overhead vigorously and jump upward at least 12 inches.
(4) Jump upward several inches and swing arms backward.

These movements of EXERCISE 1, the



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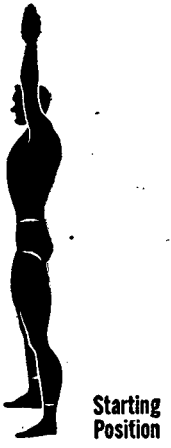
HIGH JUMPER are continuous and work into one another. The arm swing is much like that performed just prior to a standing broad jump. The jumps on counts (1), (2), and (4) are merely "crow hops". The jump on count (3) calls for full effort.



Starting Position

1

2

3

EXERCISE 2: BEND AND REACH

Starting Position. Side straddle, arms overhead.

Cadence. Moderate.

Movement.

(1) Bend trunk forward and downward. At the same time swing arms between the legs, touching fingers to ground between and behind the heels. Knees are bent. Touch fingers as far behind heels as possible.

(2) Recover to starting position.

(3) Repeat count (1).

(4) Recover to starting position.

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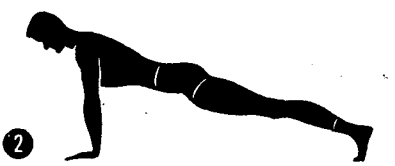
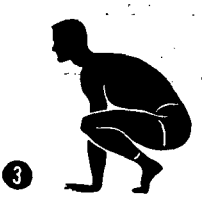
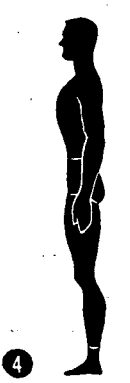
EXERCISE 3: SQUAT THRUST

Starting Position. Attention.
Cadence. Moderate.
Movement.

(1) Bend at knees and hips and, squatting down, place hands on the ground shoulder width apart. Keep elbows inside the knees.
(2) Thrust feet and legs backward to a front leaning rest position. Keep body straight from head to heels. Support weight on hands and toes.
(3) Recover to the squatting position.
(4) Recover to starting position.







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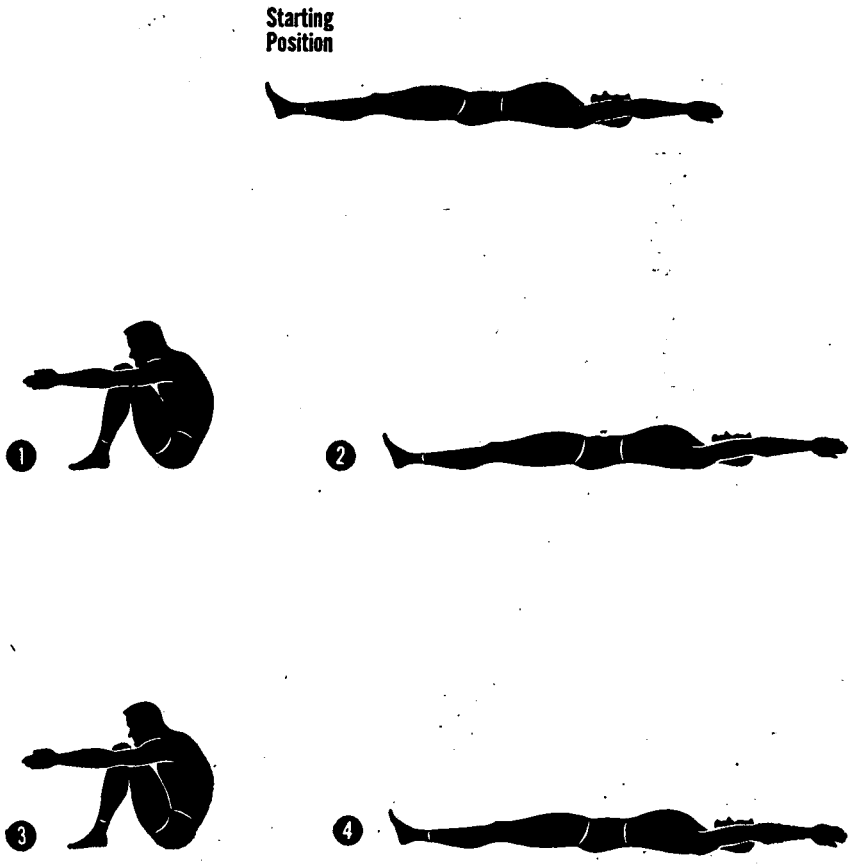

EXERCISE 4: ROWING EXERCISE

Starting Position. On back, arms extended overhead, feet together.
Cadence. Slow to moderate.
Movement.

(1) Sit up and at the same time bend knees sharply. Lean forward, swinging arms forward to a "rowing position". Keep knees together and against the chest, feet flat on the ground, and heels close to buttocks.
(2) Recover to starting position.
(3) Repeat count (1).
(4) Recover to starting position.

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EXERCISE 4A: BOTTOMS UP

Starting Position. Front leaning rest, body straight from head to heels, weight supported on hands and toes.

Cadence. Moderate.

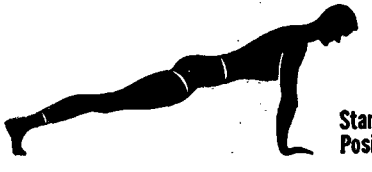
Movement.

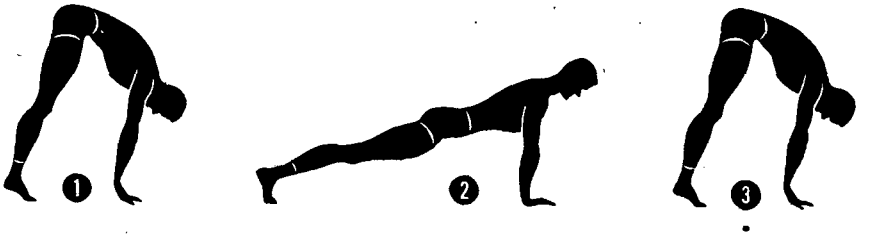
(1) Push against ground with feet, keeping knees straight, raise hips sharply and jump, feet forward so that hips are elevated and trunk and legs form an inverted V. Jump as far forward as possible with knees straight.

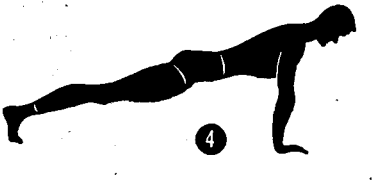
(2) Recover to starting position.

(3) Repeat count (1).

(4) Recover to starting position.







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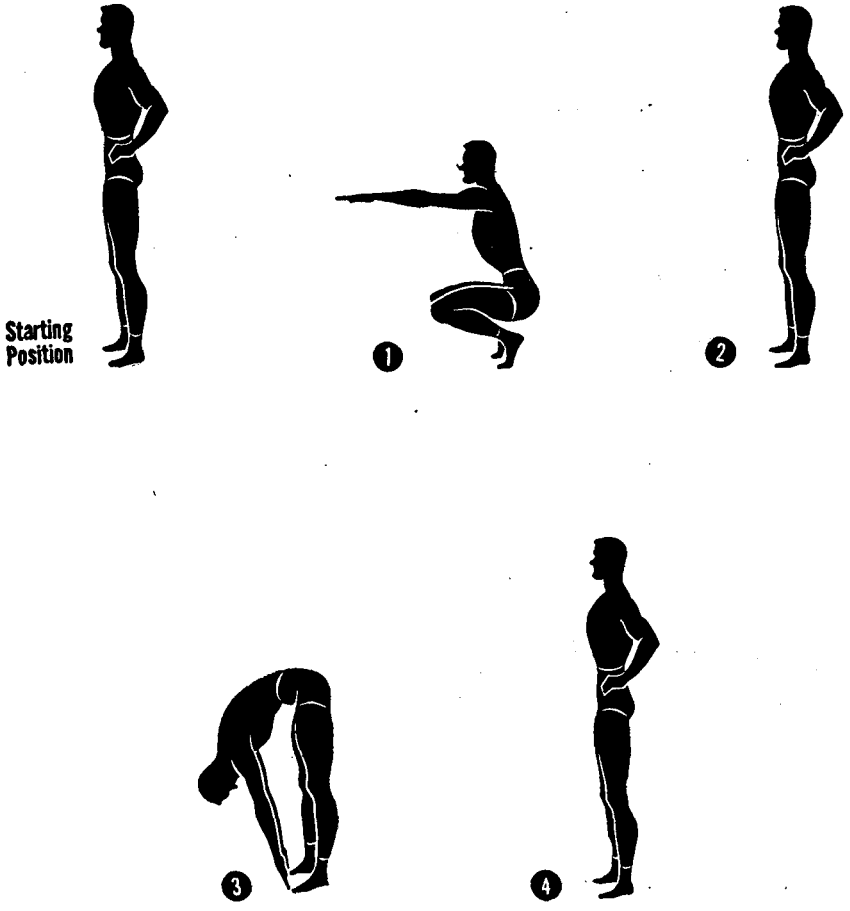

EXERCISE 5: SQUAT BENDER

Starting Position. Standing with feet slightly separated, hands on hips.
Cadence. Moderate.
Movement.

(1) Do a full knee bend, and thrust arms forward. Keep fingers extended, palms down, and trunk erect.
(2) Recover to starting position.
(3) Bend trunk forward, keeping knees straight, touch ground in front of toes.
(4) Recover to starting position.

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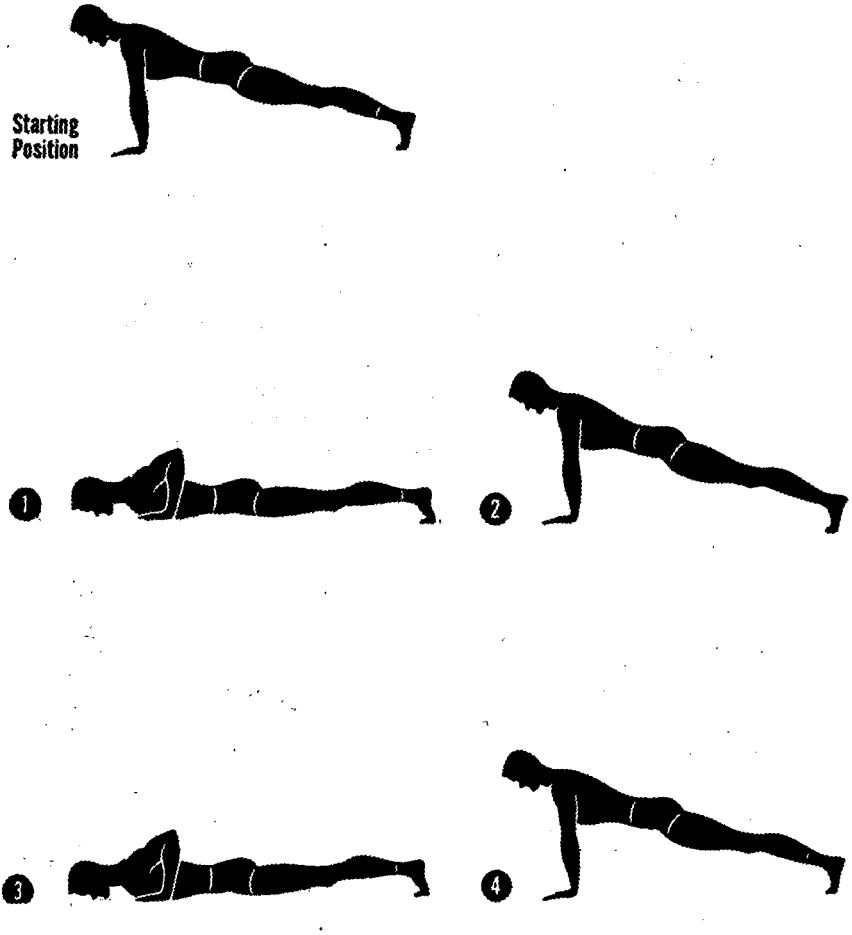

EXERCISE 6: PUSH UP

Starting Position. Front leaning rest, body straight from head to heels, weight supported on hands and toes.

Cadence. Moderate or at will.

Movement.

(1) Bend elbows and touch chest to ground keeping body straight.

(2) Straighten elbows, and recover to starting position.

(3) Repeat count (1).

(4) Repeat count (2).

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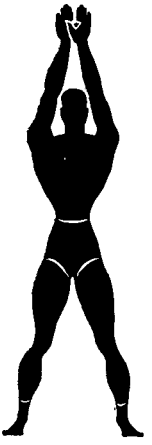
EXERCISE 7: SIDE BENDER



Starting Position

Starting Position: Side straddle, arms overhead, thumbs interlocked.

Cadence. Slow.

Movement.

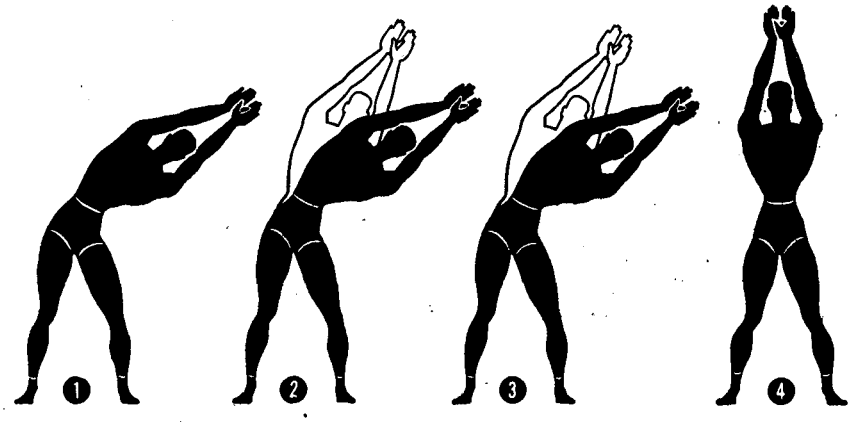
(1) Bend sidewards sharply to the left, bending the left knee. Bend straight to the side without twisting the trunk or shoulders.

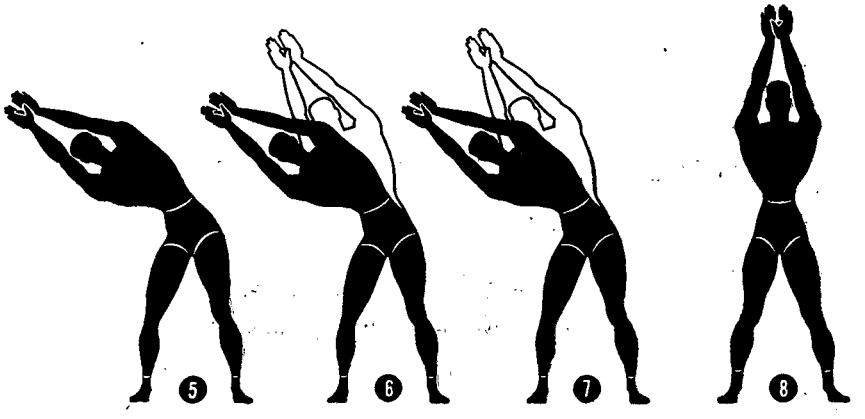
(2) Recover slightly and repeat with a bounce.

(3) Repeat count (2).

(4) Recover to starting position.

Repeat on right side for counts (5), (6), (7), and (8).





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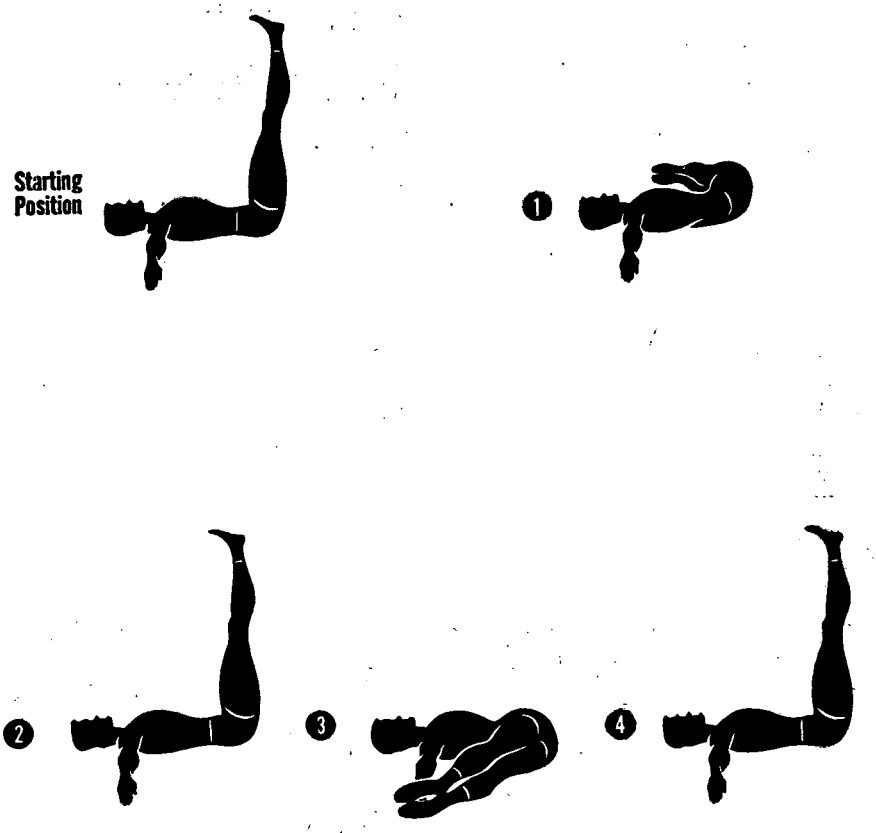

EXERCISE 8: BODY TWIST

Starting Position. On back, arms on ground and extended sideward, palms down, legs vertical, feet together, knees straight.

Cadence. Slow.

Movement.

(1) Lower legs to the left, twisting trunk and touching ground next to left hand. Keep knees straight, and both shoulders on ground. Legs must be lowered not dropped.

(2) Recover to starting position without bending knees.

(3) Lower legs to right, twisting trunk, and touching ground near right hand.

(4) Recover to starting position.

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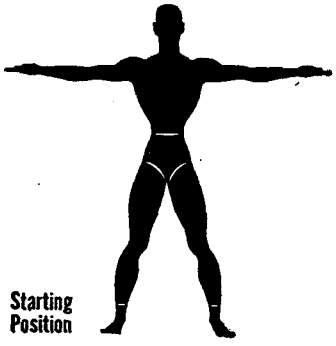
EXERCISE 8A: TURN AND BOUNCE



Starting Position. Side straddle, arms sideward, palms up.

Cadence. Moderate.

Movement.

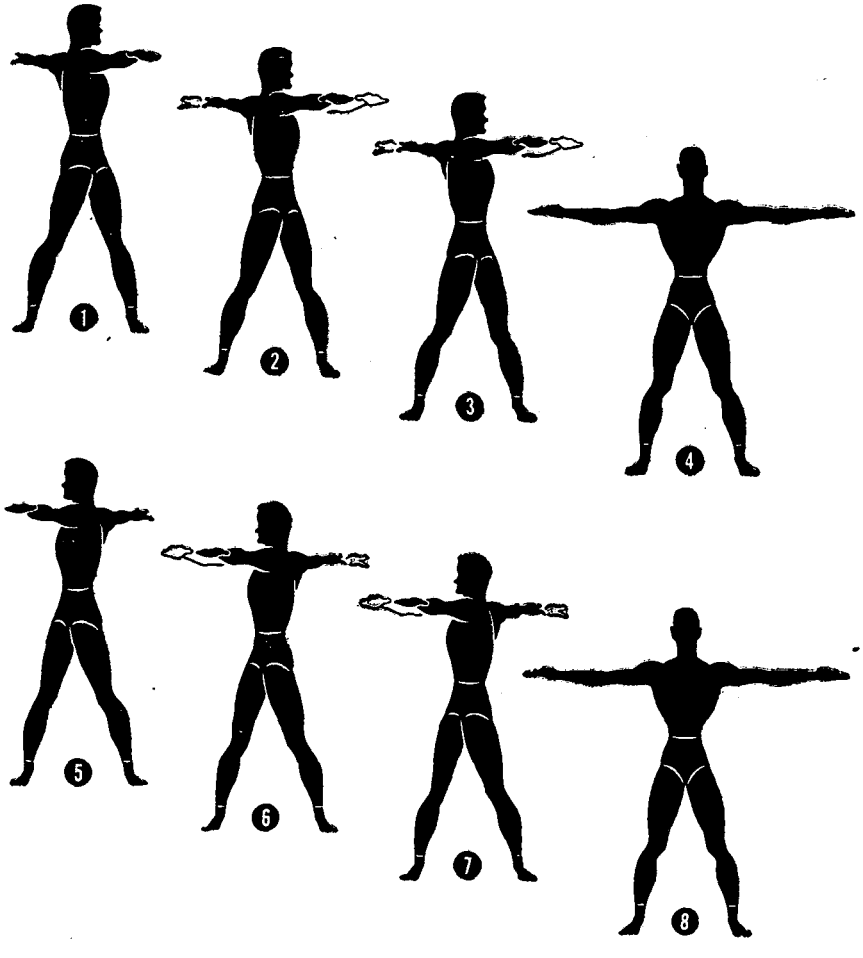
(1) Turn trunk sharply to left to limit of motion, then relax rotation slightly.

(2) Bounce to the left, and relax slightly.

(3) Repeat count (2).

(4) Recover to starting position.

Repeat on right side of counts (5), (6), (7), and (8).



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EXERCISE 9: SQUAT JUMPER*

Starting Position. Full knee bend with feet separated about 8 inches and left foot forward about 8 inches, fingers laced on top of head.

Cadence. Moderate or at will.

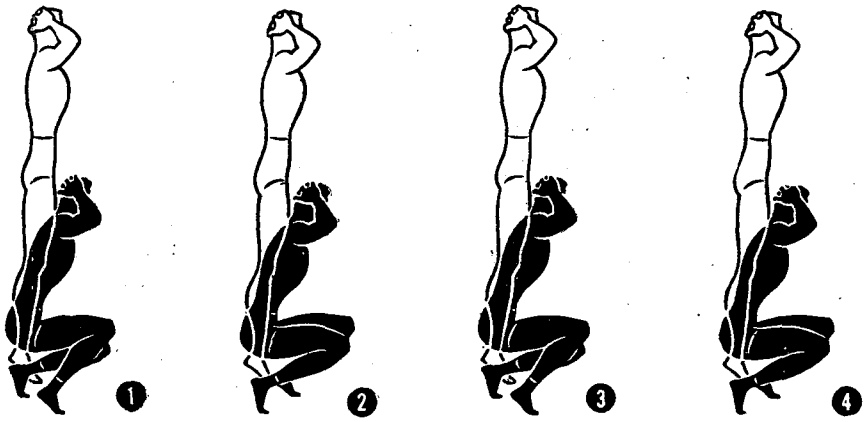
Movement.

(1) Spring upward straightening the knees and causing both feet to leave the ground. Reverse the position of the feet while in the air, moving the right foot forward and the left foot backward. Return to starting position.

(2) Repeat count (1) without pause.

(3) Repeat count (1) without pause.

(4) Repeat count (1) without pause.



* Execute only half the number of four count repetitions used for other exercises.

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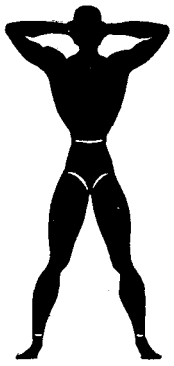


Starting Position

EXERCISE 10: TRUNK TWISTER

Starting Position. Side straddle, fingers laced behind head, elbows backward, chin in.

Cadence. Slow.

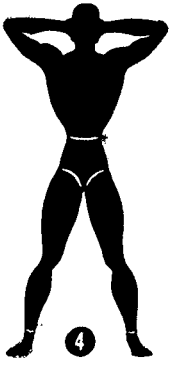
Movement.

(1) Keeping knees straight, bend forward sharply, with a slight bouncing movement that causes slight recovery from the bend. This is a vigorous movement.

(2) Bounce downward, and simultaneously turn the trunk sharply to the left so that the right elbow swings downward between the knees.

(3) Repeat count (2) to the right. This time the left elbow swings down between knees.

(4) Recover to starting position, pulling head backward and chin inward strongly.



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EXERCISE 11: STATIONARY RUN

Starting Position. Standing with arms in loose thrust position.
Cadence. First slow, then fast, then slow.
Movement.

Begin run slowly, then speed up somewhat, raising knees above hips. Increase gradually to full speed, raising knees hard, then slow down. For men in good condition, this exercise should continue for approximately 1 to 1½ minutes, the middle half minute of which should be at top speed.

EXERCISE 12: EIGHT COUNT PUSH UP

Starting Position. Attention.
Cadence. Moderate.
Movement.

(1) Bend at knees and hips and place hands on floor in front of feet in squatting position.
(2) Thrust feet and legs backward to a front leaning rest position. Keep body straight from head to heels. Support weight on hands and toes.
(3) Bend elbows and touch chest to ground.
(4) Recover to front leaning rest position.
(5) Repeat count (3).

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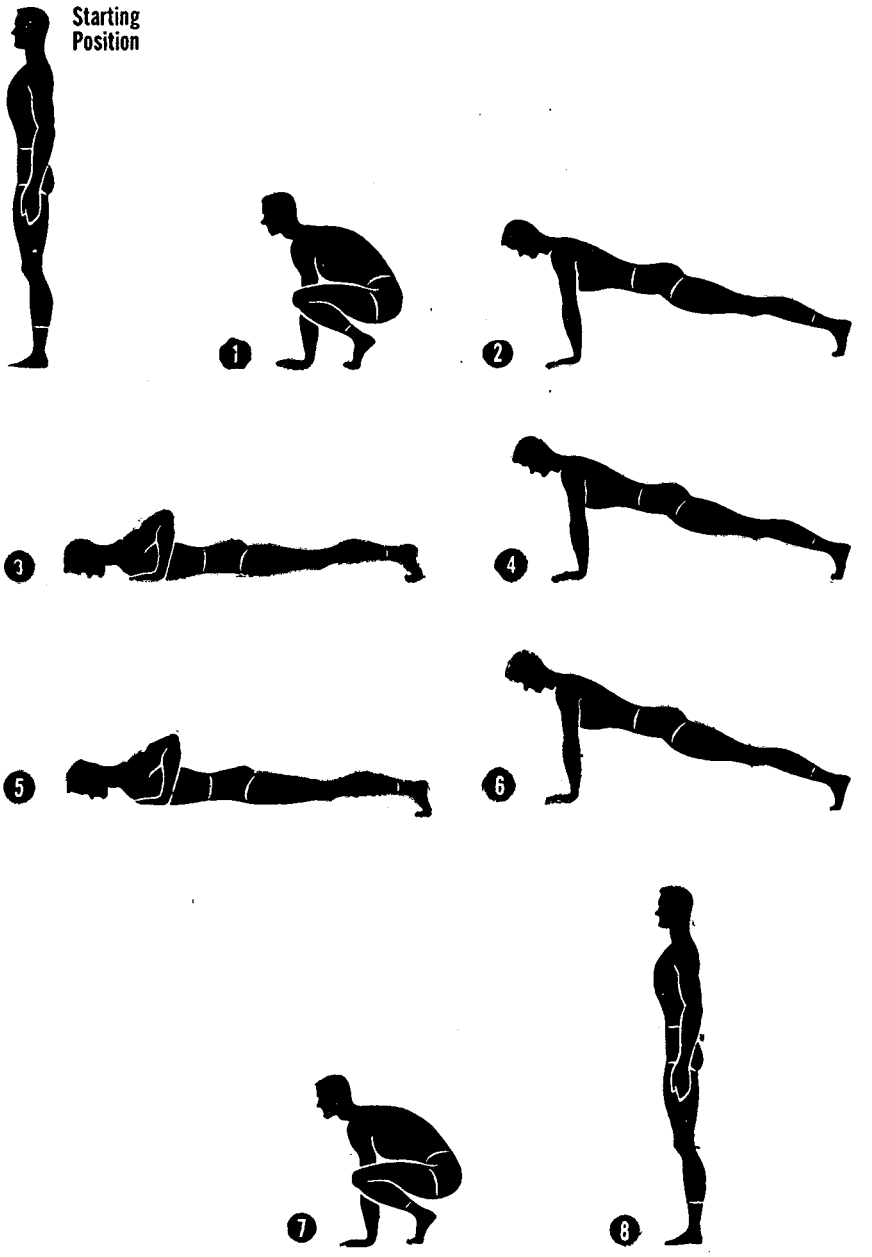
(6) Recover to front leaning rest position.
(7) Recover to squatting position.
(8) Recover to starting position.



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50. DRILL NO. 2.

EXERCISE 1: JUMPING JACK

Starting Position. Side straddle, arms overhead.

Cadence. Fast.

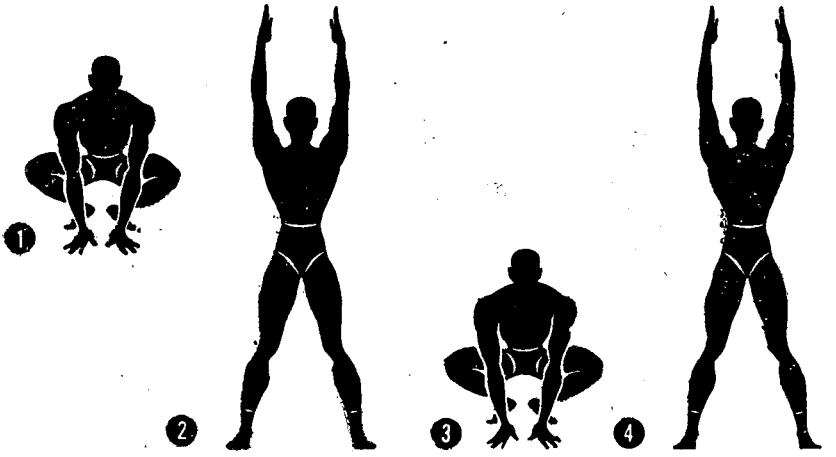
Movement.

(1) Jump to position with feet together and squat to full knee bend position, swinging arms sideward and downward. Place hands on ground in front of feet.

(2) Recover to starting position by jumping to side straddle and swinging arms sideward over head.

(3) Repeat count (1).

(4) Recover to starting position.



EXERCISE 2: LUNGER

Starting Position. Attention.

Cadence. Moderate.

Movement.

(1) Lunge diagonally forward left, with arms sideward, and palms up.

(2) Bend sharply forward and downward and wrap arms around left thigh above knee, "folding" arms around thigh.

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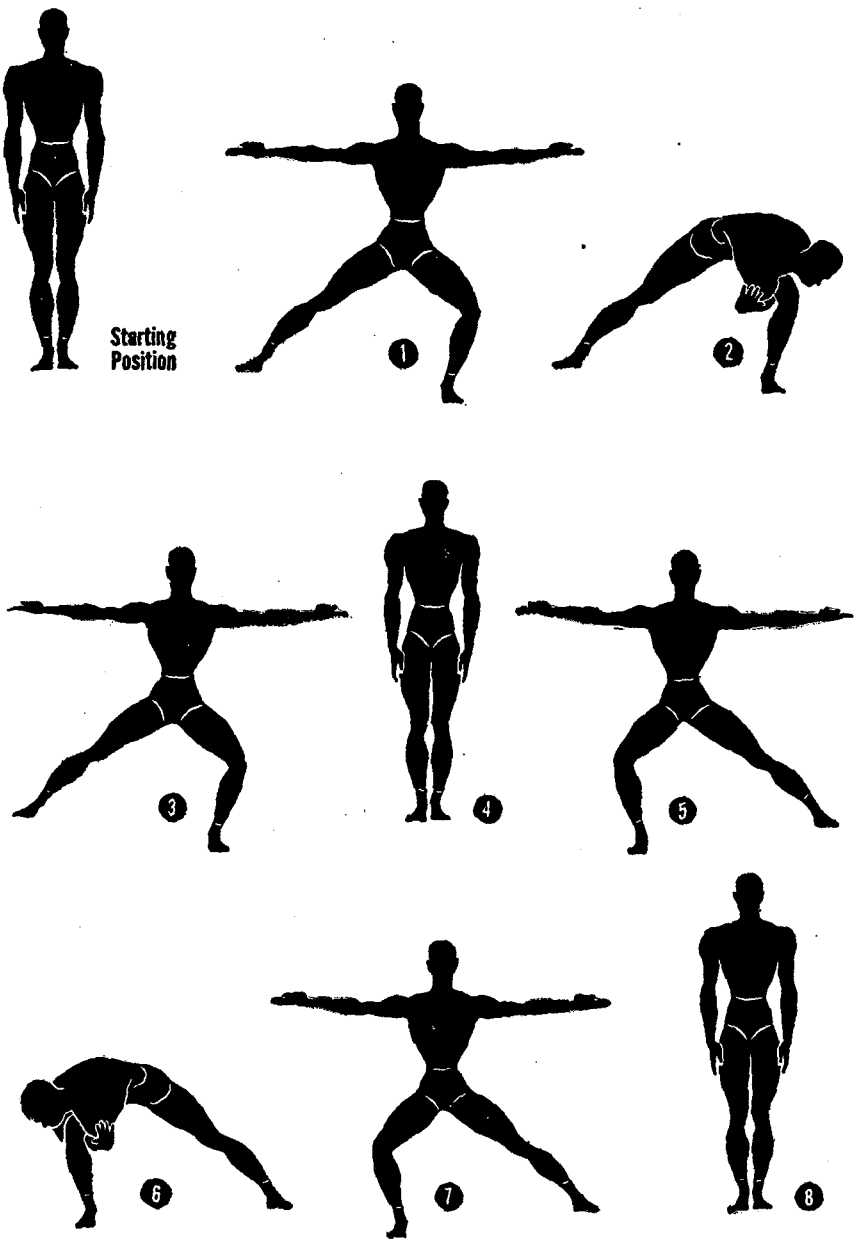
(3) Recover to first position.
(4) Recover to starting position.
Repeat on *right* side for counts (5), (6), (7) and (8).



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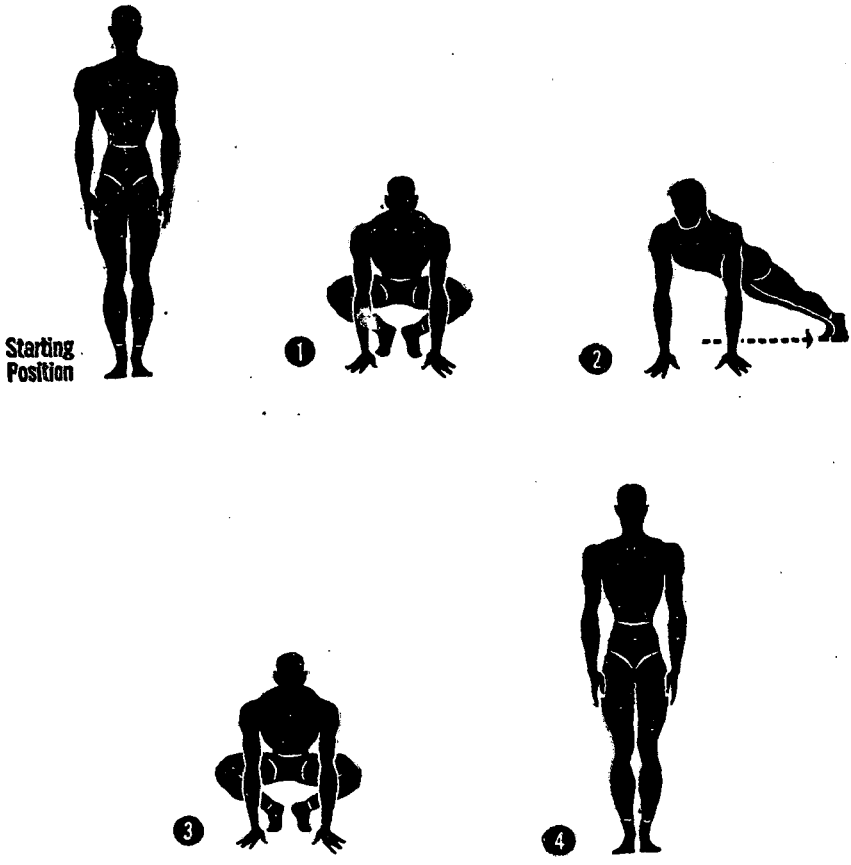

EXERCISE 3: DIAGONAL SQUAT THRUST

Starting Position. Attention.
Cadence. Moderate.
Movement.

(1) Squat, placing hands on ground shoulder width apart. Keep elbows inside knees.
(2) Thrust feet and legs diagonally backward to the left to a front leaning rest position. Keep body straight from head to heels, but at a 45° angle from the hands.
(3) Recover to the squatting position.
(4) Recover to starting position.

Repeat thrusting legs diagonally backward to the right. Perform half the repetitions to the left and half to the right. Alternate sides.

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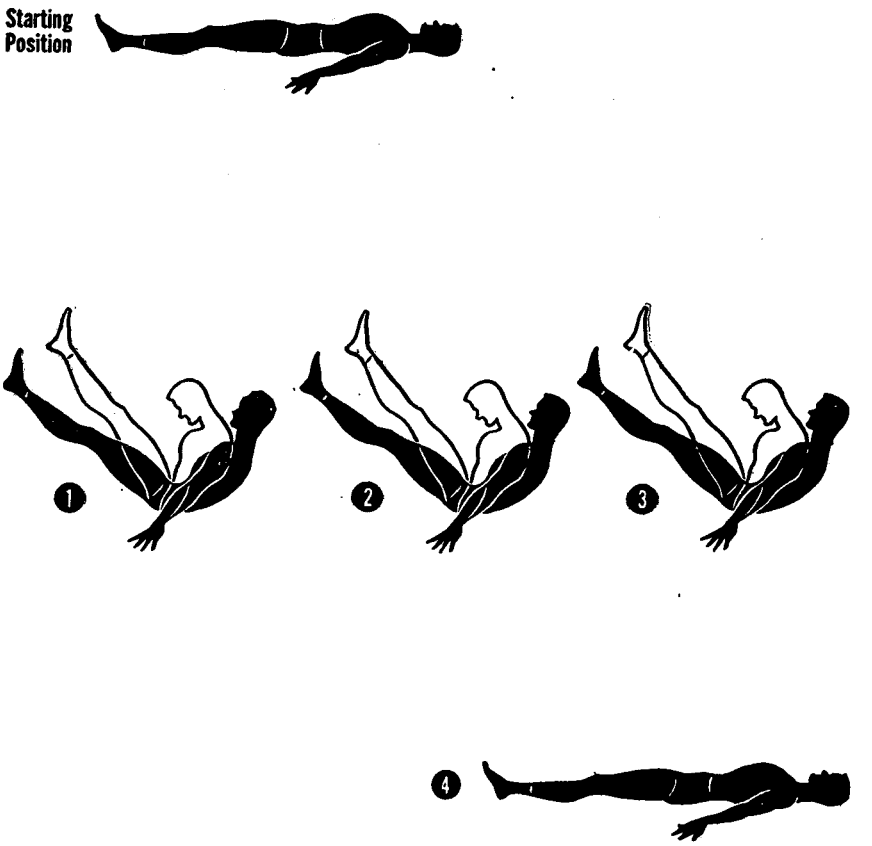
EXERCISE 4: V-UP

Starting Position. On back, arms on ground 45° from the sides, palms down.
Cadence. Moderate.
Movement.

(1) Raise legs with knees straight, and at the same time sit up until trunk and legs form a V position. Then relax slightly. (This is a "bounce" movement.)
(2) Again pull vigorously to the V position, and again relax.
(3) Repeat count (2).
(4) Recover to starting position.



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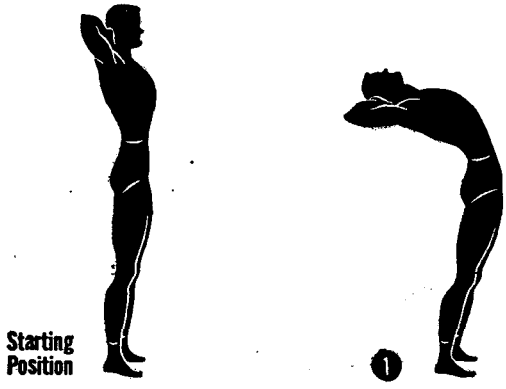
EXERCISE 4A: BACK BENDER

Starting Position. Standing, feet twelve inches apart, fingers laced behind head.
Cadence. Slow.

(1) Bend *upper* trunk backward, raising chest high, pulling elbows back, and looking upward. Keep knees straight.
(2) Recover to starting position.
(3) Repeat count (1).
(4) Recover to starting position.



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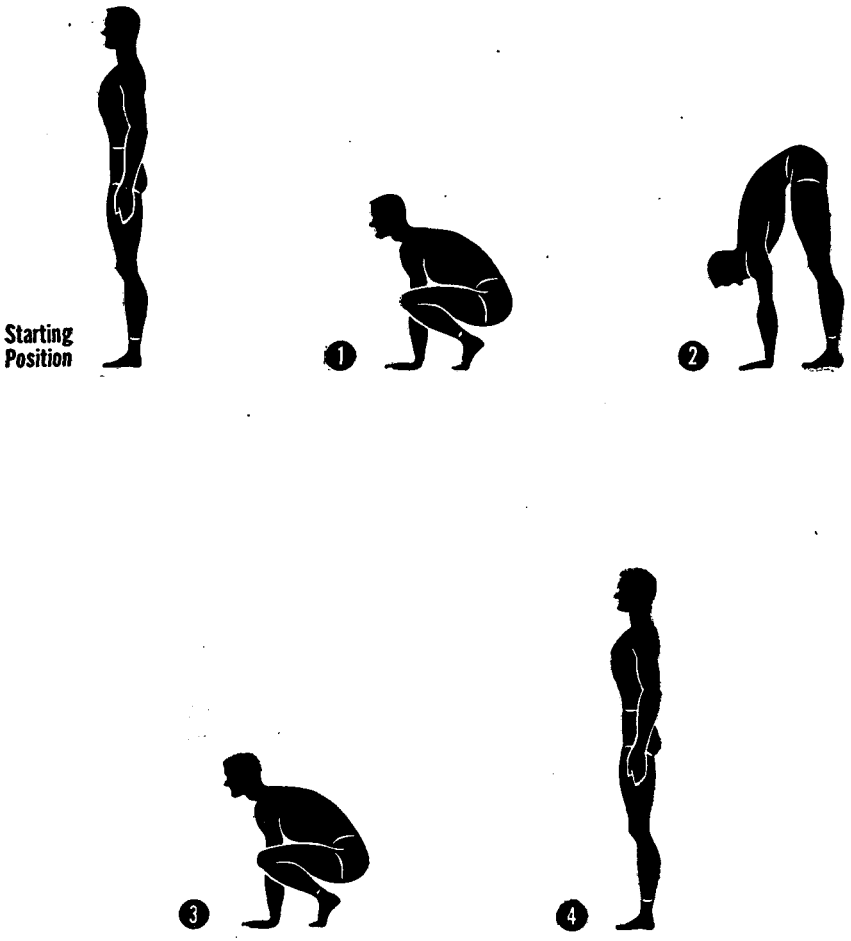

EXERCISE 5: SQUAT STRETCH

Starting Position. Attention.
Cadence. Moderate.
Movement.
(1) Squat down with hands on ground about 1 foot in front of feet.
(2) Keeping hands on ground, straighten knees completely and raise hips.
(3) Recover to first position.
(4) Recover to starting position.

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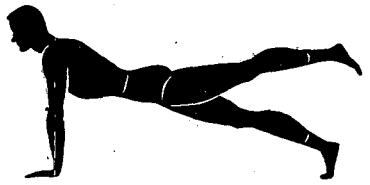
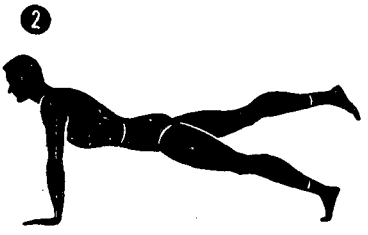
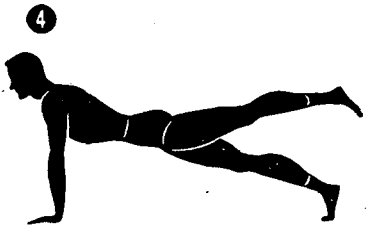
Starting Position







EXERCISE 6: ONE LEGGED PUSH UP

Starting Position. Front leaning rest, with left leg raised backward, knee straight and foot about 2 feet above ground.

Cadence. Moderate or at will.

Movement.

(1) Bend elbows and touch chest to ground, keeping the body straight. At the same time lower left foot to ground.

(2) Straighten elbows and push up to straight arm position. At the same time raise right leg.

(3) Bend elbows and touch chest to ground, lowering right foot to the ground.

(4) Recover to starting position.

EXERCISE 7: LUNGE AND BEND

Starting Position. Attention.

Cadence. Moderate.

Movement.

(1) Lunge sideward left and swing arms sideward and upward.

(2) Bend trunk sideward keeping arms parallel.

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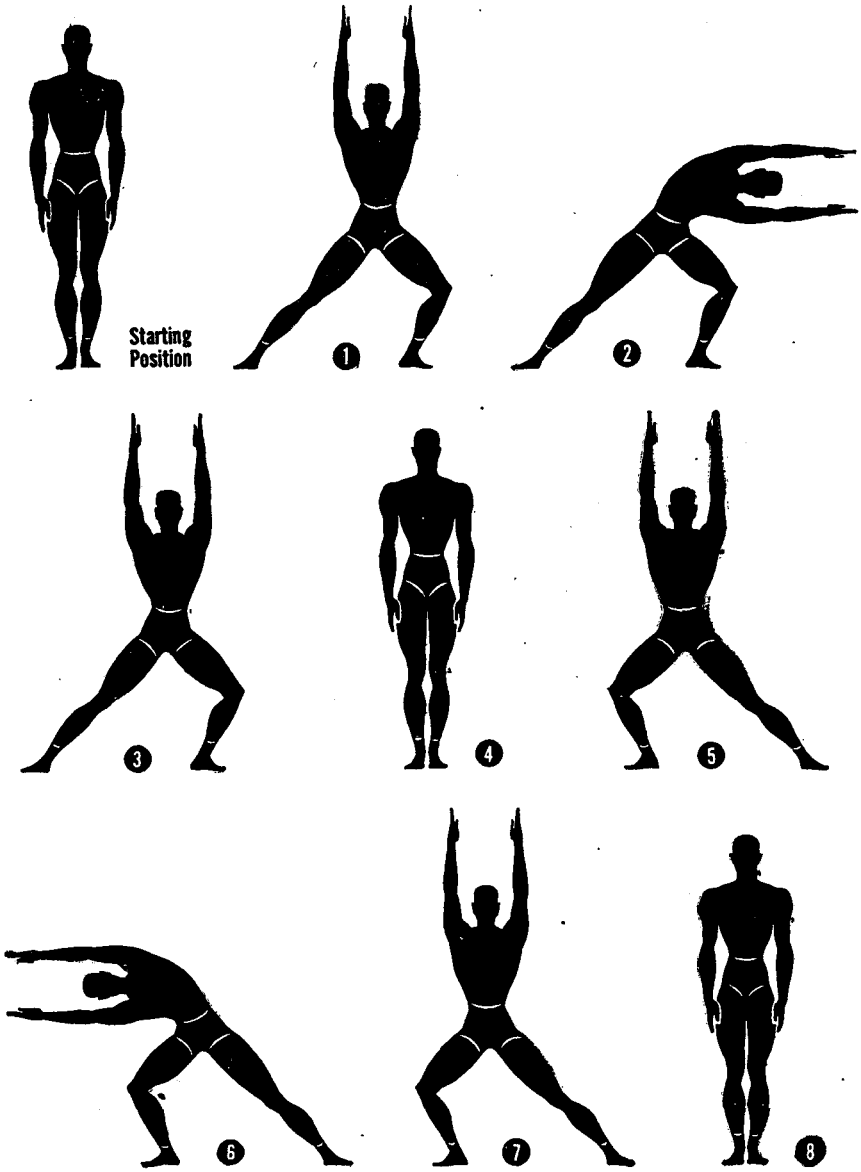
(3) Recover to first position.
(4) Recover to starting position.
Repeat on right side for counts (5), (6), (7), and (8).



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EXERCISE 8: LEG CIRCLER

Starting Position. On back, arms stretched sideward, palms down, feet raised about 1 foot from ground, knees straight.

Cadence. Slow.

Movement.

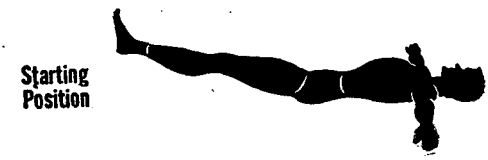
(1) Swing legs as far as possible to the left, keeping knees straight and legs together.

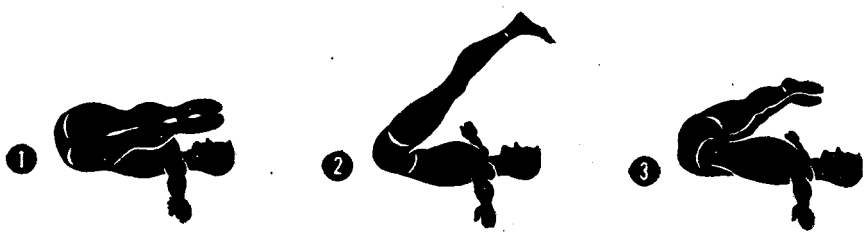
(2) Swing legs in front of chest flexing thighs as close as possible in front of trunk.

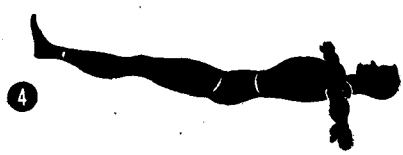
(3) Swing legs as far as possible to the right.

(4) Recover to starting position.

After having completed half the number of repetitions, the direction of the leg circles should be reversed. The cadence should be counted so that a continuous circling movement of the legs is made.







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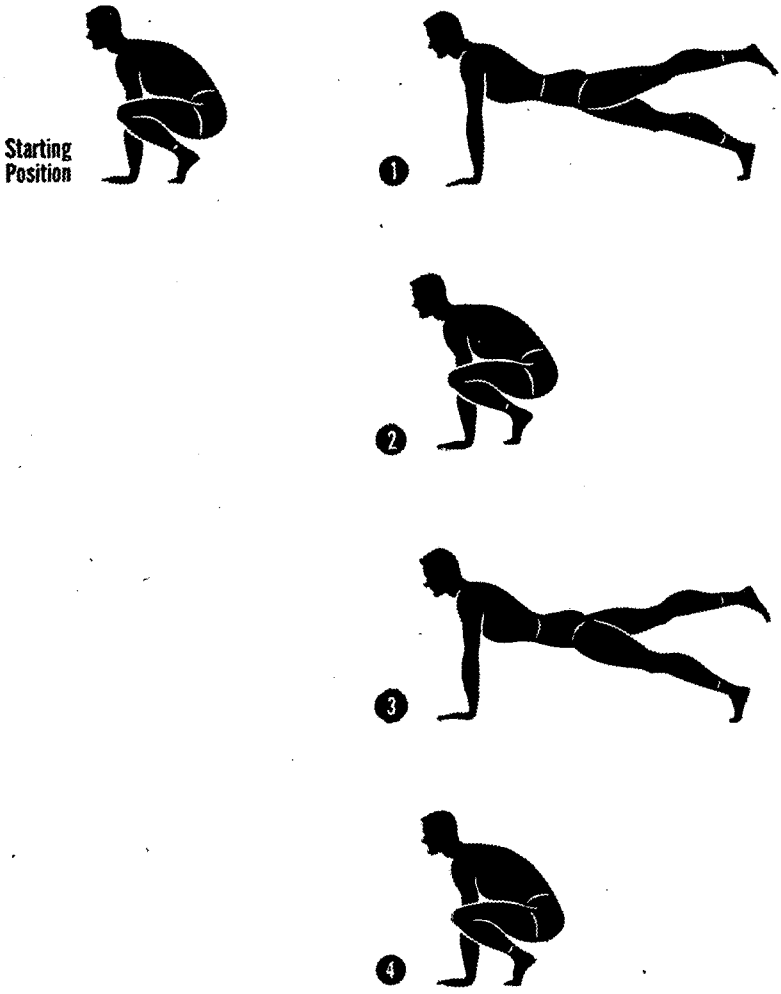

EXERCISE 8A: ARCH THRUST

Starting Position. Squatting position, hands on ground in front of feet.
Cadence. Slow.
Movement.

(1) Thrust both legs backward, coming to rest with the right foot on ground and the left leg raised backward with knee straight. Hips should not be elevated. Head should be raised facing forward.
(2) Recover to starting position.
(3) Repeat count (1) raising right leg.
(4) Recover to starting position.

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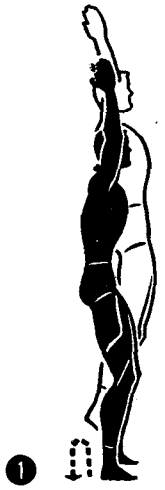

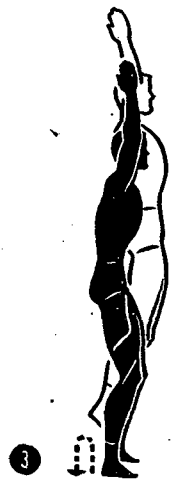

EXERCISE 9: DOUBLE HIGH JUMPER

Starting Position. Feet separated about 12 inches, knees slightly bent, arms raised backward, body bent slightly forward at the waist.
Cadence. Moderate.
Movement.

(1) Swing arms forward and upward and jump upward vigorously.
(2) Swing arms downward and backward and jump upward slightly.
(3) Repeat count (1).
(4) Repeat count (2).

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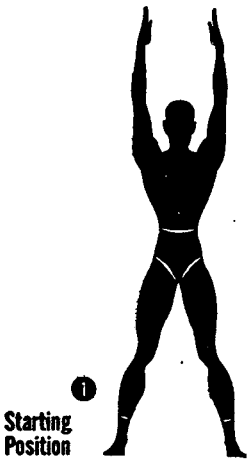


EXERCISE 10: TURN AND BEND

Starting Position. Side straddle, arms overhead.

Cadence. Moderate.

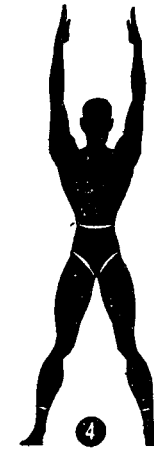
Movement.

(1) Turn trunk to left and bend forward over left thigh, attempting to touch hands to ground outside of left foot. Keep the left knee straight. On successive repetitions attempt to touch farther and farther to the side.

(2) Recover to starting position. Chest should be high, and arms should reach upward hard.

(3) Turn trunk to right and bend forward over right thigh, attempting to touch hands to ground outside right foot. Keep right knee straight.

(4) Recover to starting position.



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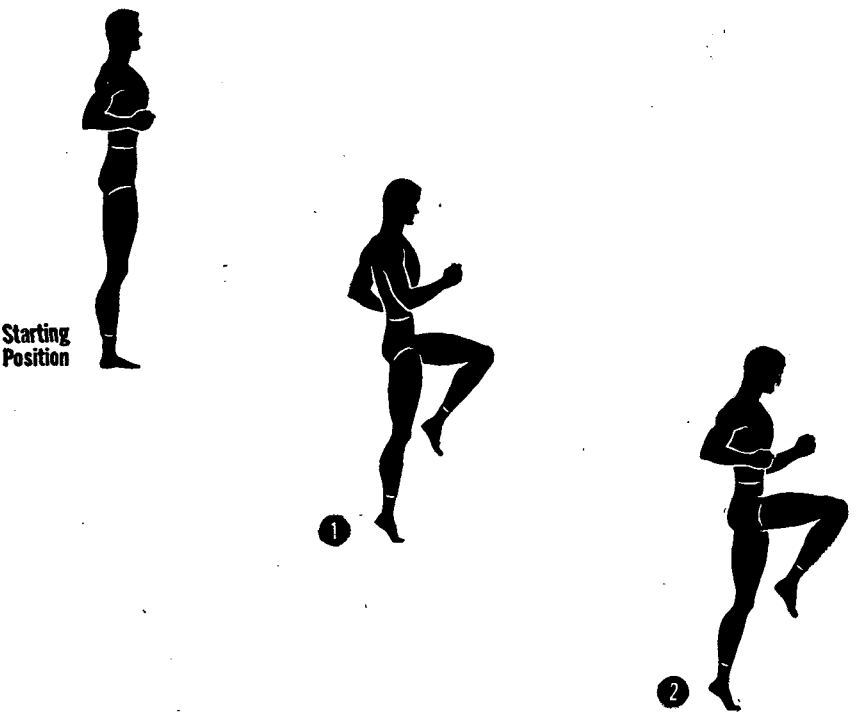
EXERCISE 11: STATIONARY RUN

Starting Position. Standing with arms in loose thrust position.
Cadence. First slow, then fast, then slow.
Movement.

Begin run slowly, then speed up somewhat, raising knees above hips. Increase gradually to full speed, raising knees hard, then slow down. For men in good condition, this exercise should continue for approximately 1 to 1½ minutes, the middle half minute of which should be at top speed.



EXERCISE 12: LEG THRUST AND DIP

Starting Position. Squatting position.
Cadence. Moderate.
Movement.
(1) Thrust legs backward to front leaning rest.

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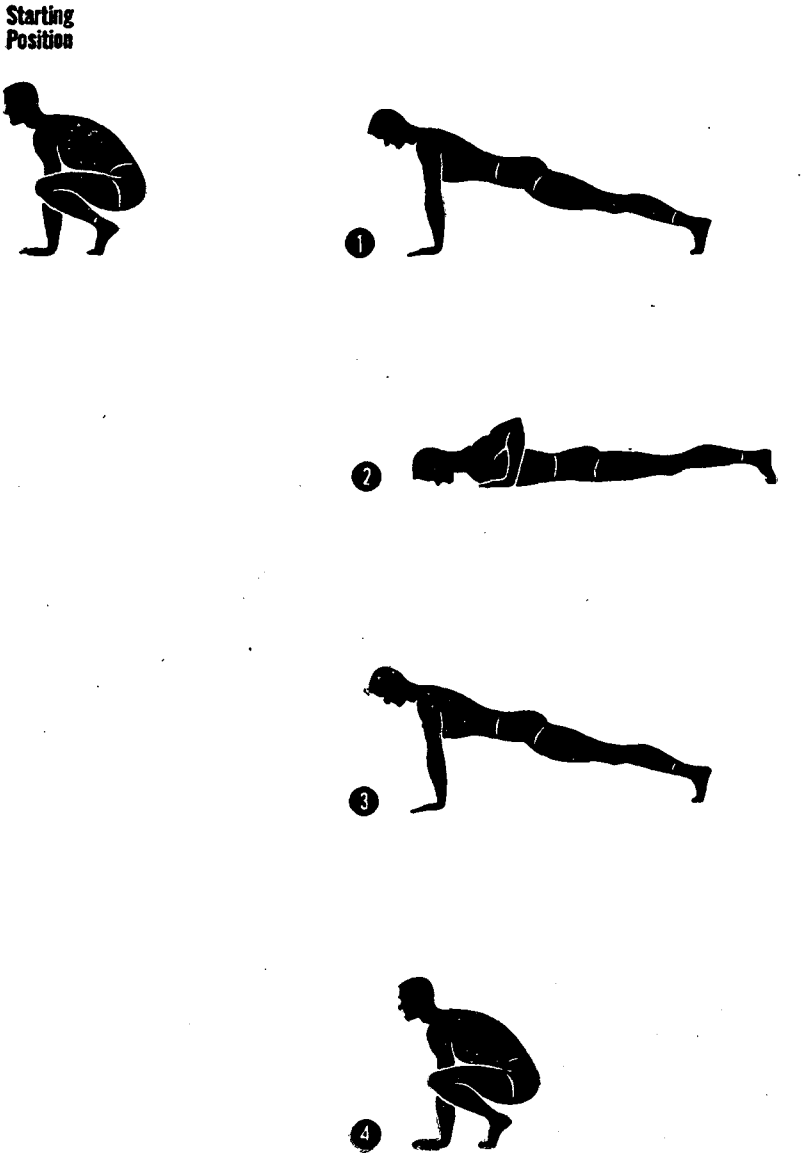
(2) Bend elbows and touch chest to ground keeping body straight.
(3) Straighten elbows, raising body in a straight line.
(4) Recover to starting position.



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CHAPTER 5

RIFLE EXERCISES

51. GENERAL. a. Rifle exercises are in effect conditioning exercises performed with a rifle. The additional weight of the rifle makes the exercises more strenuous and thus provides greater development, particularly of the upper body. Rifle exercises are excellent substitutes for conditioning exercises.

b. Rifle exercises are conducted in a manner similar to the conditioning exercises. Three set drills are available. The men should be required to memorize a drill so that they can go through it in a continuous fashion. The cumulative count should be emphasized, and the number of repetitions of each exercise should be gradually increased. Six repetitions of each four- or eight-count exercise is the starting dosage.

c. A substitute for one of the regular exercises in a drill is indicated by the addition of an "A".

52. DRILL NO. 1.

EXERCISE 1: FORWARD AND TWIST

Starting Position. Rifle downward. Otherwise the body is in a position of attention.

Cadence. Fast.

Movement.

(1) Swing arms forward to height of shoulders.

(2) Raise right hand and lower left hand to front perpendicular. At same time bend trunk to left.

(3) Recover to first position.

(4) Recover to starting position.

(5) Swing arms forward to height of shoulders.

(6) Raise left hand and lower right hand to front perpendicular. At same time bend trunk to right.

(7) Recover to fifth position.

(8) Recover to starting position.

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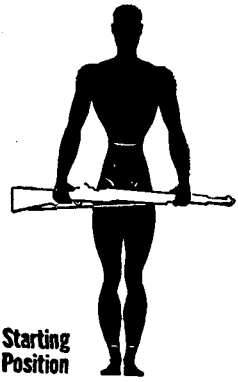
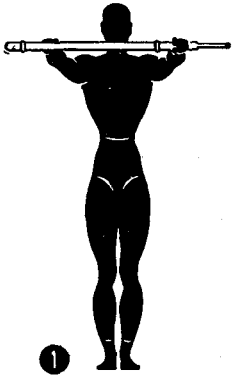


Starting Position



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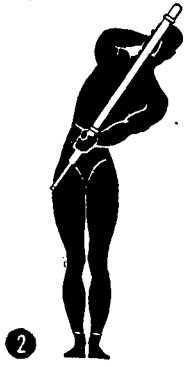

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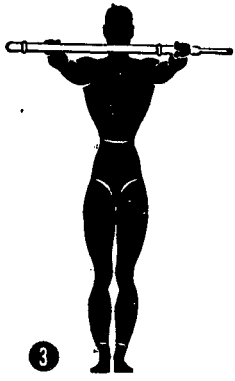

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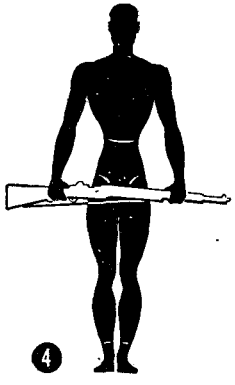

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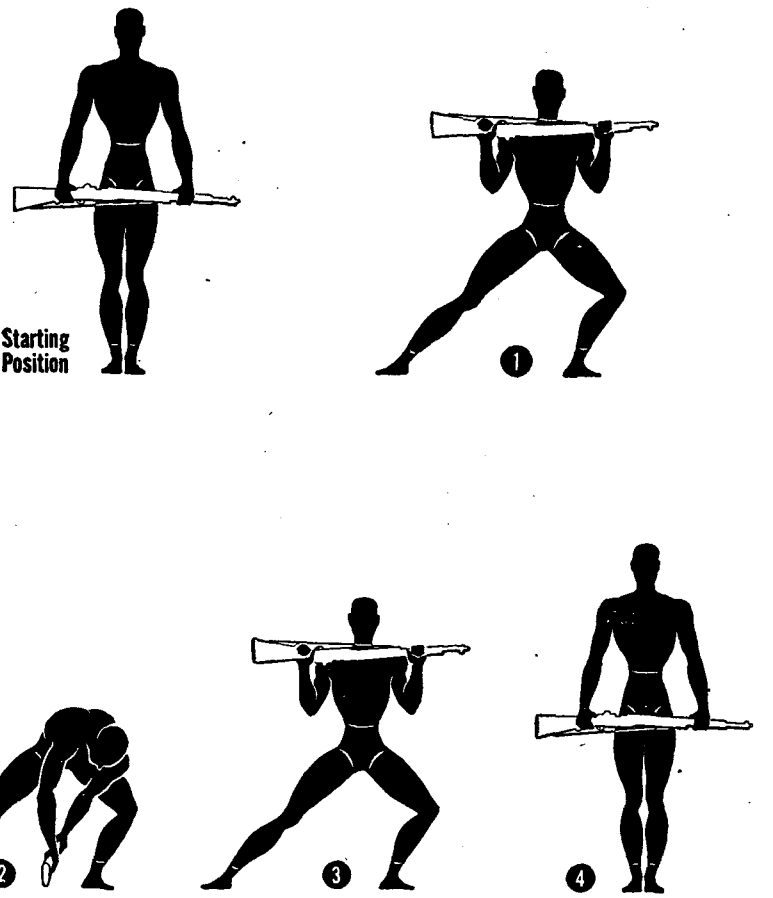
EXERCISE 2: SIDE LUNGE AND BEND

Starting Position. Rifle downward.
Cadence. Moderate.
Movement.
(1) Lunge sideward left and flex elbows to thrust position.
(2) Swing rifle with muzzle backward to low horizontal between legs. Keep rifle parallel to ground and just above level of ankles.
(3) Recover to first position.
(4) Recover to starting position.
Repeat on right side for counts (5), (6), (7), and (8).



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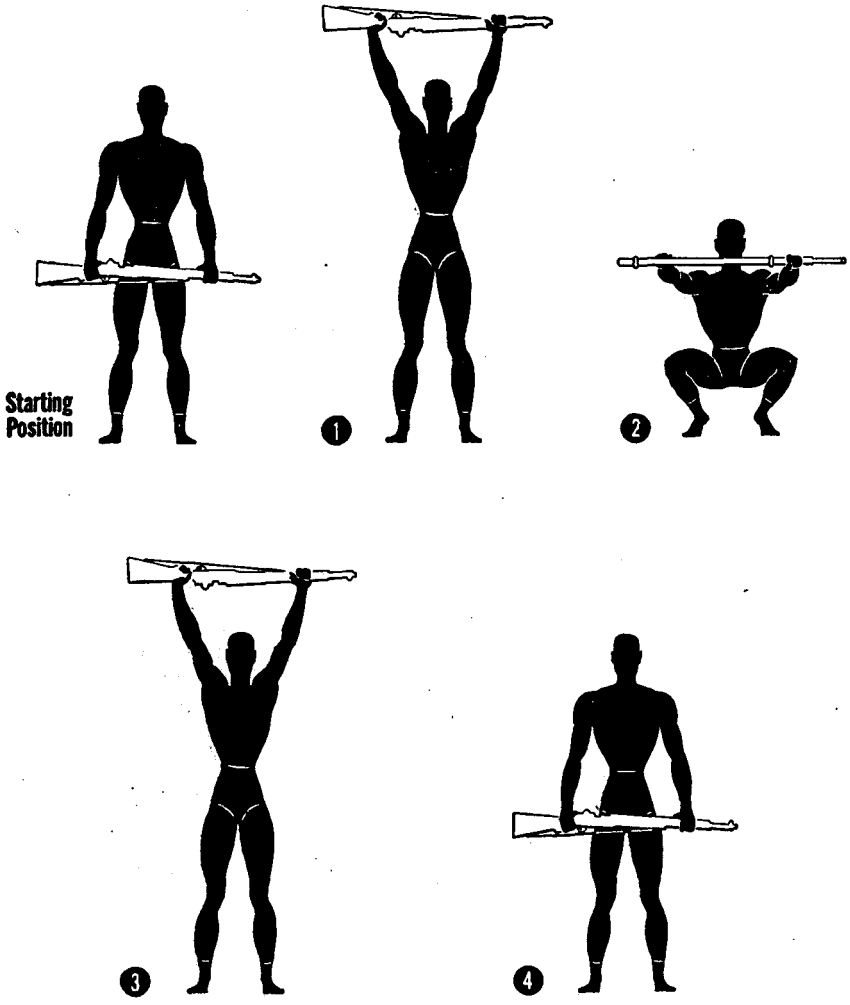

EXERCISE 3: FORE UP, FULL SQUAT

Starting Position. Rifle downward, feet 12 inches apart.
Cadence. Moderate.
Movement.
(1) Swing arms forward and upward to overhead.
(2) Swing arms forward and do a full knee bend.
(3) Recover to first position.
(4) Recover to starting position.

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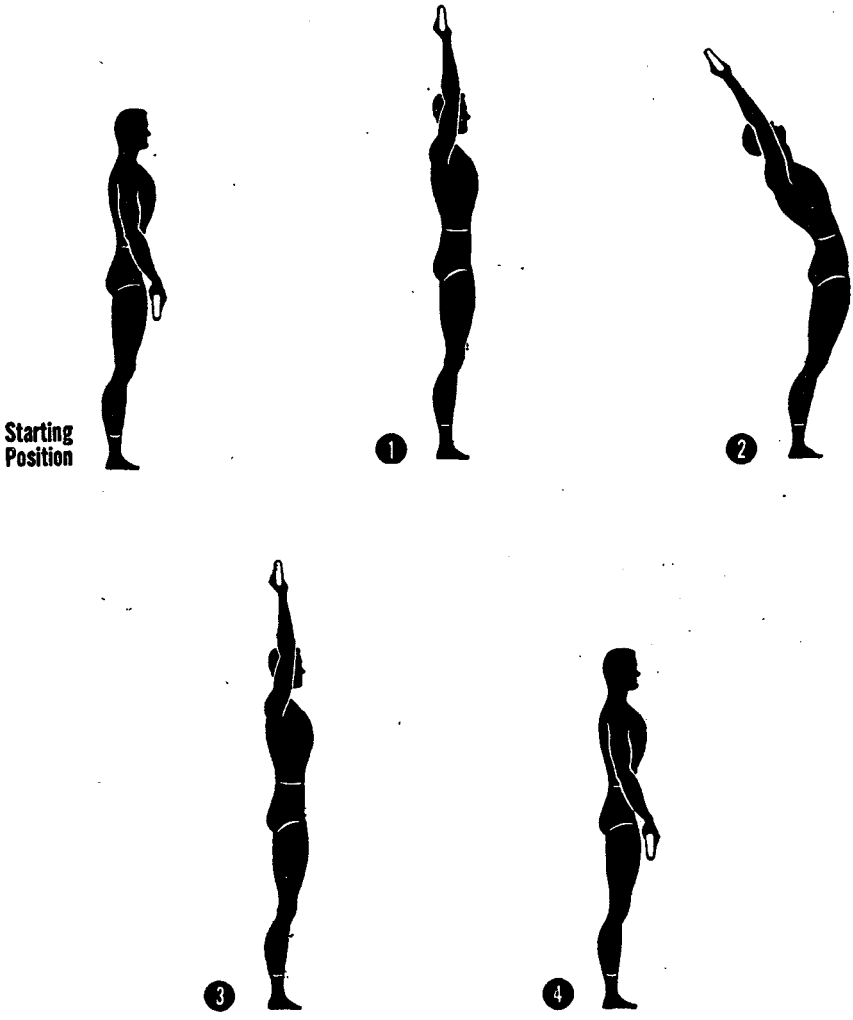

EXERCISE 4: FORE UP, BACK BEND

Starting Position. Rifle downward.
Cadence. Moderate.
Movement.
(1) Swing arms forward and upward to overhead.
(2) Bend backward, emphasizing the bend in the upper back. Face upward. Keep knees straight.
(3) Recover to first position.
(4) Recover to starting position.

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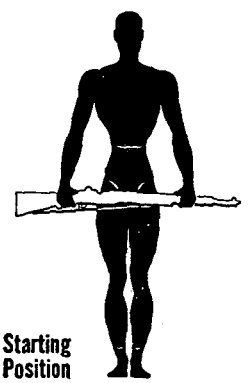
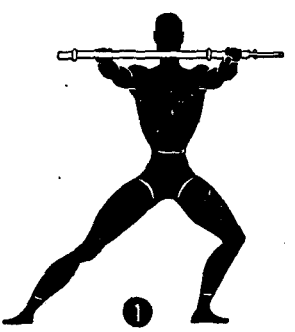
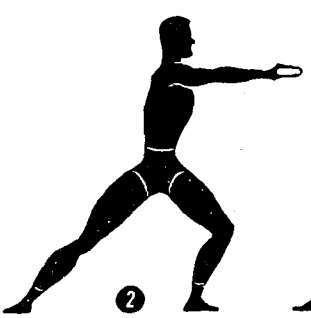
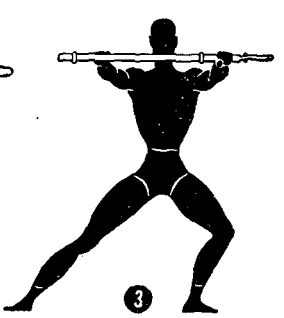
EXERCISE 5: LUNGE AND TURN

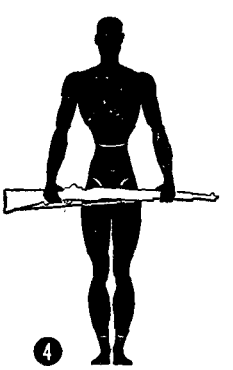
Starting Position. Rifle downward.
Cadence. Moderate.
Movement.
(1) Lunge sideward left, raising arms forward.
(2) Turn trunk to left.
(3) Recover to first position.
(4) Recover to starting position.
Repeat on right side for counts (5), (6), (7), and (8).











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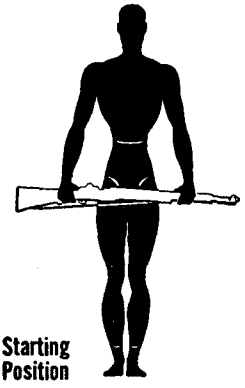
EXERCISE 6: HIGH GUN SIDE BEND

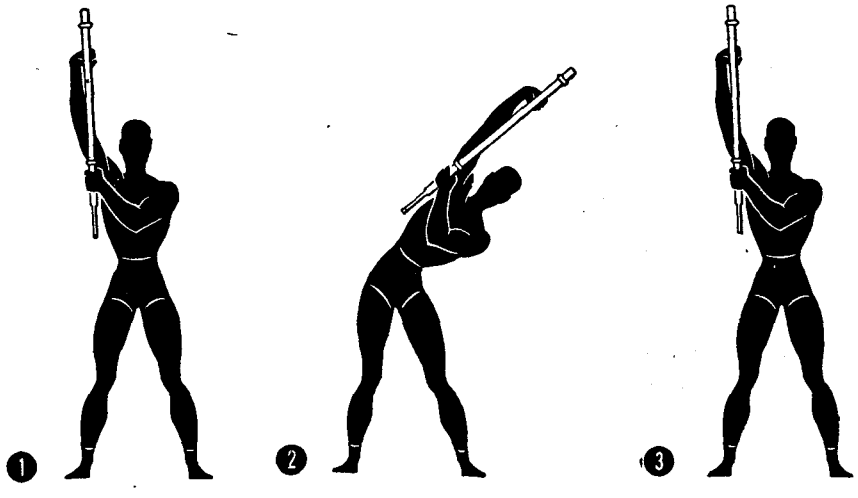


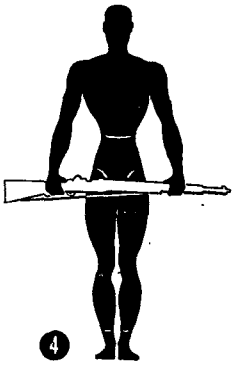
Starting Position

Starting Position. Rifle downward.
Cadence. Moderate.
Movement.

(1) Step sideward left with left foot, swinging rifle to a position in line with the right side. Keep left hand immediately in front of right shoulder, right arm upward.
(2) Bend sideward left. Keep knees straight.
(3) Recover to first position.
(4) Recover to starting position.

Repeat on right side for counts (5), (6), (7), and (8).





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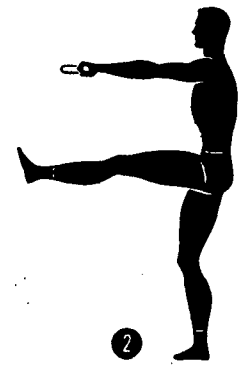

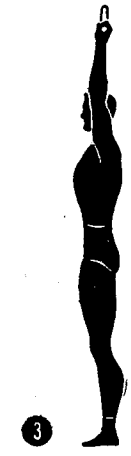

EXERCISE 7: LEG AND ARM FORWARD

Starting Position. Rifle downward.
Cadence. Moderate.
Movement.

(1) Swing arms forward and upward to overhead position.
(2) Raise left leg forward to the horizontal keeping knee straight. At the same time swing arms forward. Right knee bends slightly.
(3) Recover to first position.
(4) Recover to starting position.

Repeat on right side for counts (5), (6), (7), and (8).

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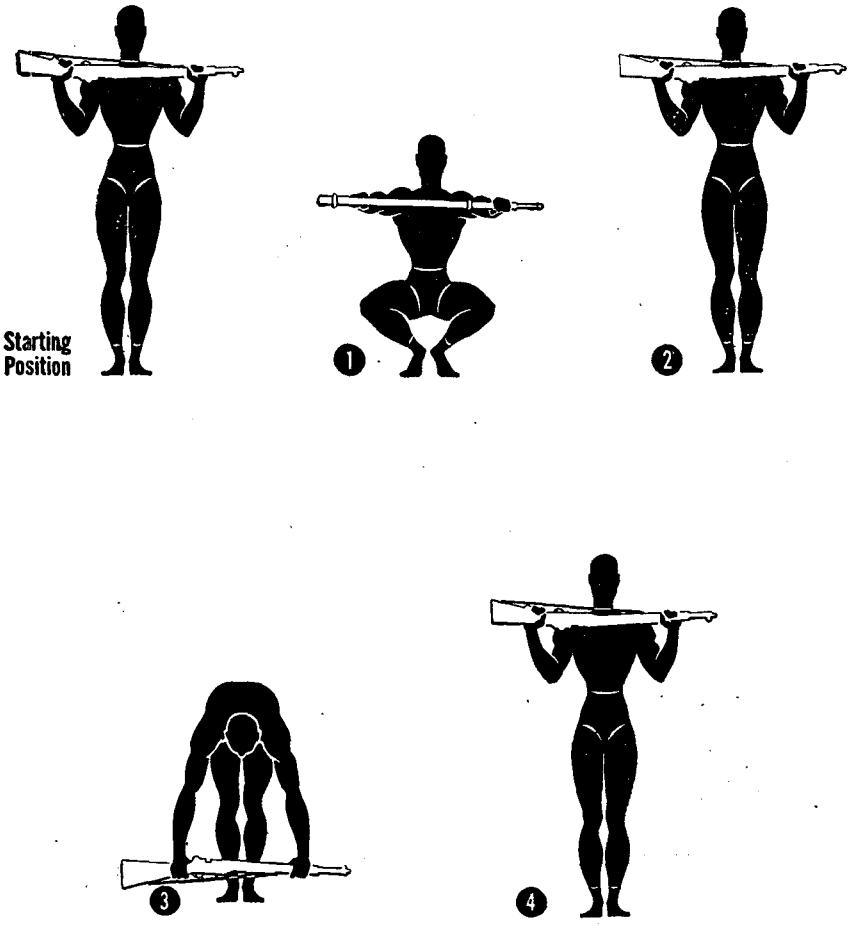

EXERCISE 8: SQUAT BENDER

Starting Position. Rifle at thrust position.
Cadence. Moderate.
Movement.
(1) Execute a knee bend and thrust arms forward.
(2) Recover to starting position.
(3) Bend forward and thrust rifle downward to low front horizontal (rifle in front of ankles).
(4) Recover to starting position.

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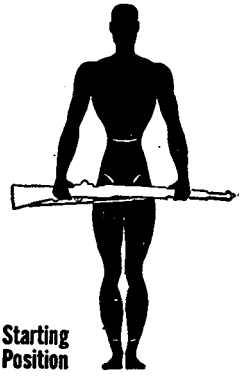
EXERCISE 9:
STEP LEFT, TURN, AND BEND

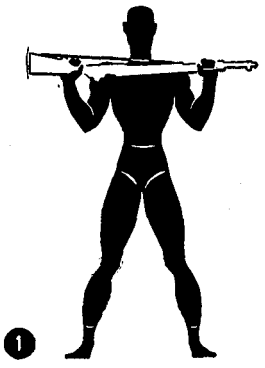


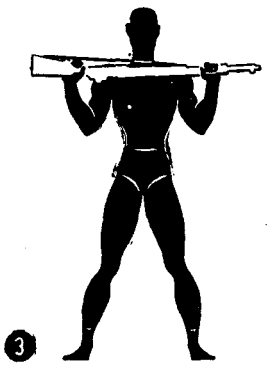
Starting Position

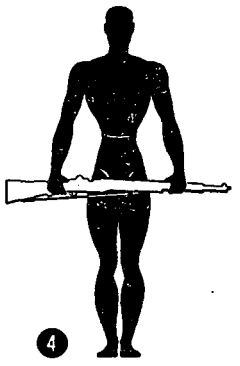
Starting Position. Rifle downward.
Cadence. Moderate.
Movement.

(1) Flex elbows to thrust position and step sideward with left foot.
(2) Turn trunk to left and bend forward over left hip. At the same time thrust rifle downward to low side-horizontal.
(3) Recover to first position.
(4) Recover to starting position.

Repeat on right side for counts (5), (6), (7), and (8).







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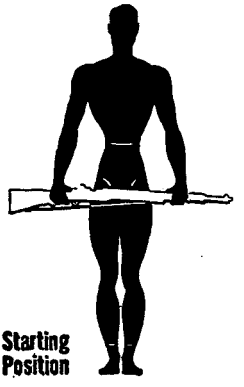
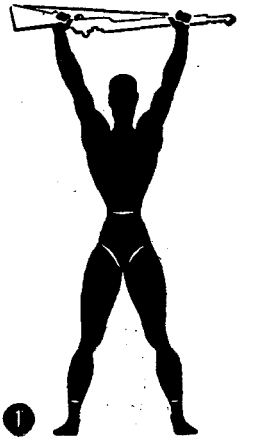
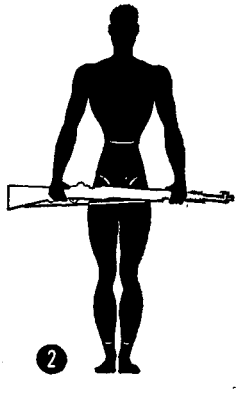
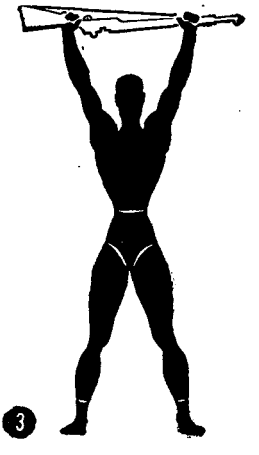
EXERCISE 10: JUMPING JACK

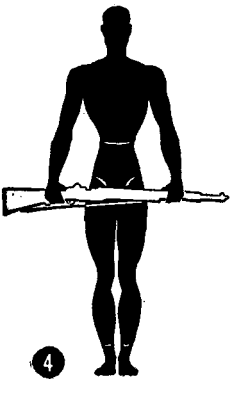
Starting Position. Rifle downward.
Cadence. Fast.
Movement.
(1) Jump to side straddle and swing arms forward and upward to overhead position.
(2) Recover to starting position.
(3) Repeat count (1).
(4) Recover to starting position.











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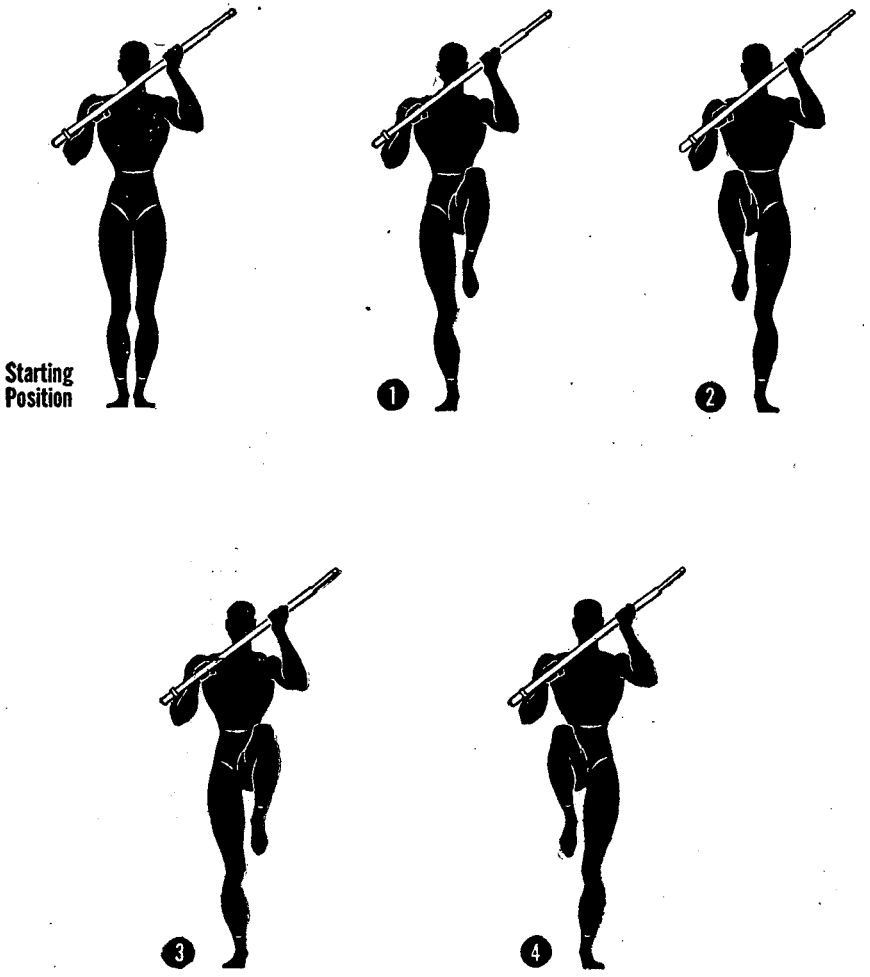

EXERCISE 10A: STATIONARY RUN

Starting Position. Rifle held at high port.

Cadence. Slow, then fast, then slow.

Movement.

Begin run slowly then speed up somewhat, raising knees above hips. Increase tempo gradually to full speed, raising knees high. Then slow down. Men in good condition should continue this exercise for approximately 1 to 1½ minutes. The middle half minute should be at full speed.

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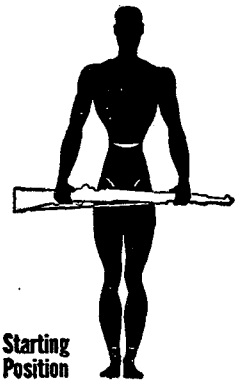
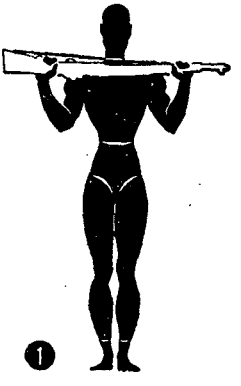
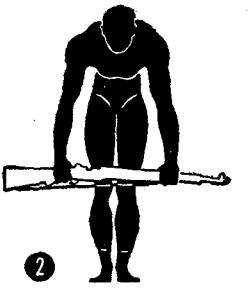
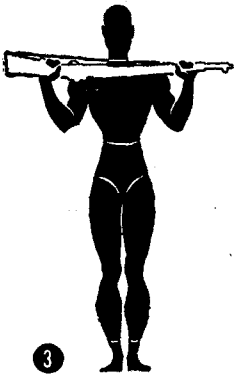




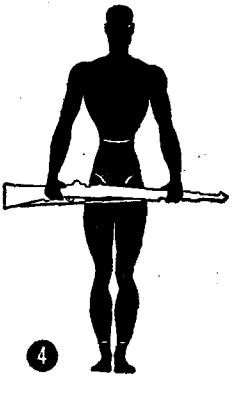




EXERCISE 11: THRUST AND BEND

Starting Position. Rifle downward.
Cadence. Slow.
Movement.

(1) Flex elbows, moving rifle to thrust position.
(2) Thrust downward, bending forward about 45° and bringing rifle in front of knees in low front horizontal. Keep knees straight.
(3) Recover to first position.
(4) Recover to starting position.



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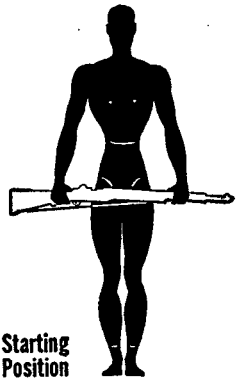
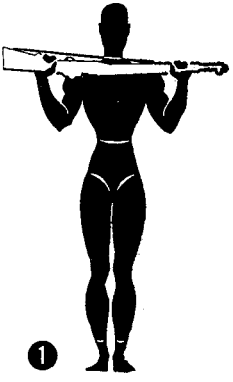


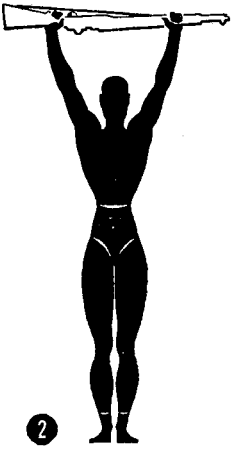
53. DRILL NO. 2. Some of the exercises in this drill require the men to sit or lie on the ground. These exercises should be used only when ground conditions are favorable.

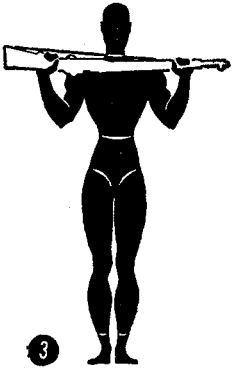
EXERCISE 1: FLEX AND THRUST UP

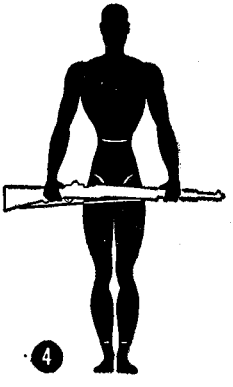
Starting Position. Rifle downward.
Cadence. Fast.
Movement.

(1) Flex elbows moving rifle to thrust position.
(2) Thrust upward to overhead position.
(3) Recover to first position.
(4) Recover to starting position.









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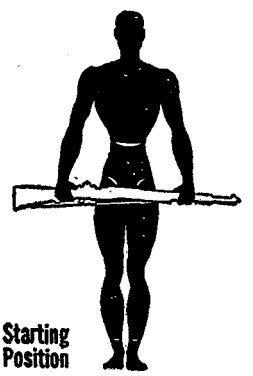
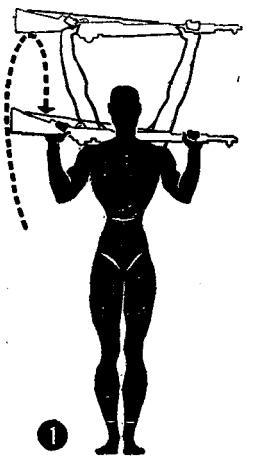
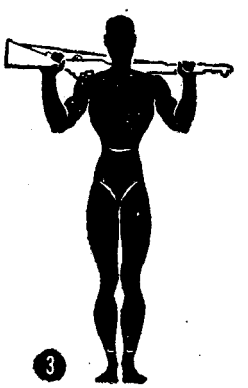
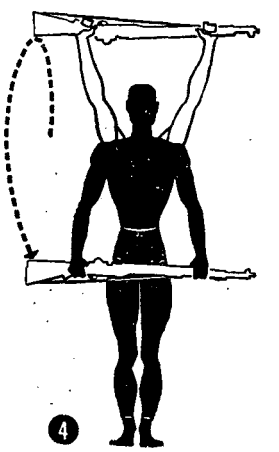
EXERCISE 2: FULL KNEE BEND

Starting Position. Rifle downward.
Cadence. Moderate.
Movement.
(1) Swing rifle forward and upward, then place it behind shoulders.
(2) Full knee bend.
(3) Recover to first position.
(4) Recover to starting position.









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Starting Position

EXERCISE 3: SIT UP THRUST FORWARD

Starting Position. On back, rifle downward.
Cadence. Moderate.
Movement.
(1) Sit up with knees straight and thrust rifle forward until just over ankles.
(2) Recover to starting position.
(3) Repeat count (1).
(4) Recover to starting position.

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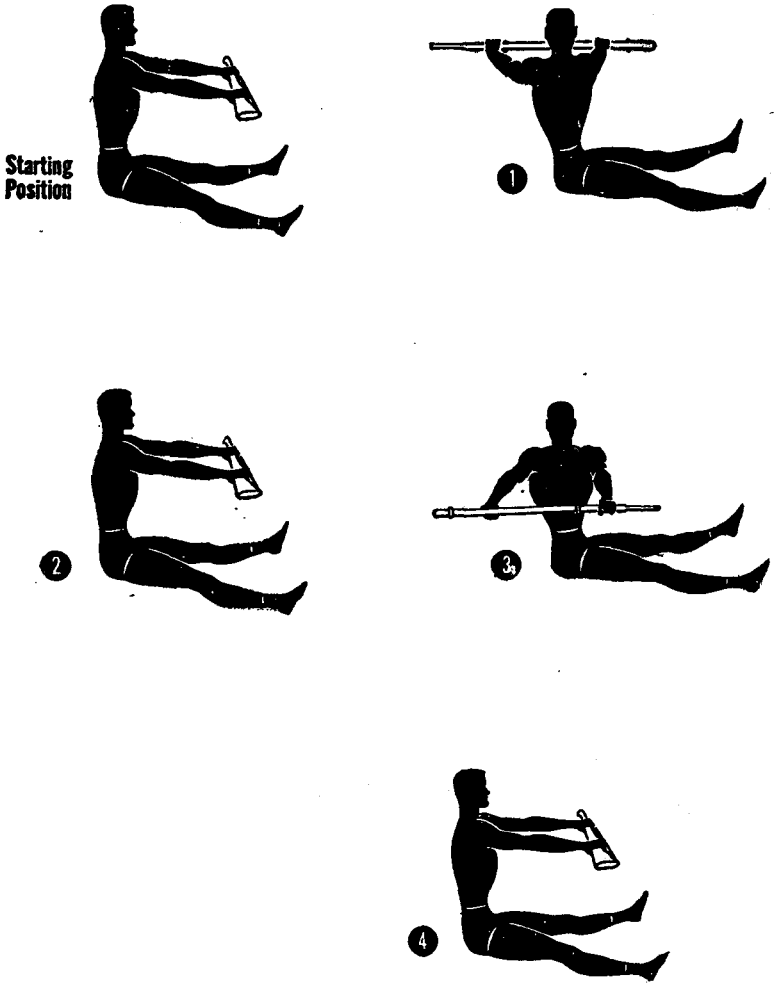

EXERCISE 4: SIT AND TURN

Starting Position. Seated on ground, feet apart about 3 feet, rifle forward.
Cadence. Moderate.
Movement.

(1) Rotate trunk to left.
(2) Recover to starting position.
(3) Rotate trunk to right.
(4) Recover to starting position.

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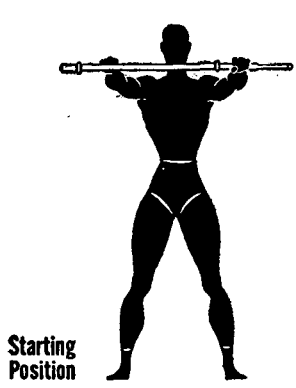
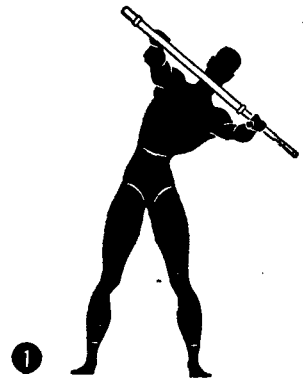
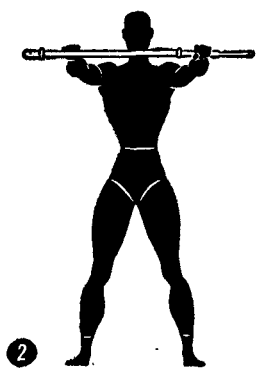
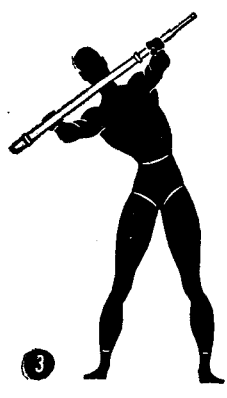
EXERCISE 5: ARMS FORWARD SIDE BEND

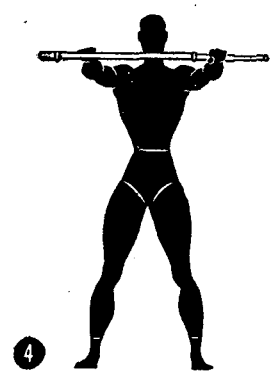
Starting Position. Side straddle, rifle forward.
Cadence. Moderate.
Movement.
(1) Bend trunk to left. Keep knees straight.
(2) Recover to starting position.
(3) Bend trunk to right. Keep knees straight.
(4) Recover to starting position.











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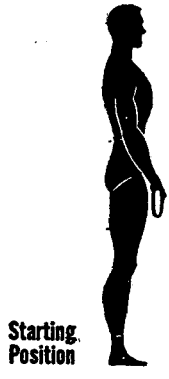
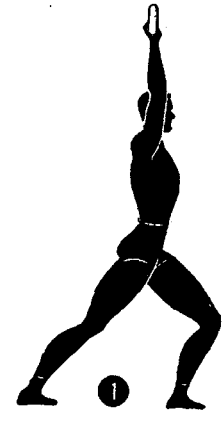
EXERCISE 6: LUNGE, FRONT BEND

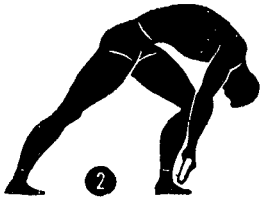
Starting Position. Rifle downward.
Cadence. Moderate.
Movement.

(1) Lunge forward with left foot, and swing arms forward and upward to overhead position.
(2) Bend trunk forward, and swing rifle down to low front horizontal in front of left ankle.
(3) Recover to first position.
(4) Recover to starting position.

Repeat with right foot on counts (5), (6), (7), and (8).







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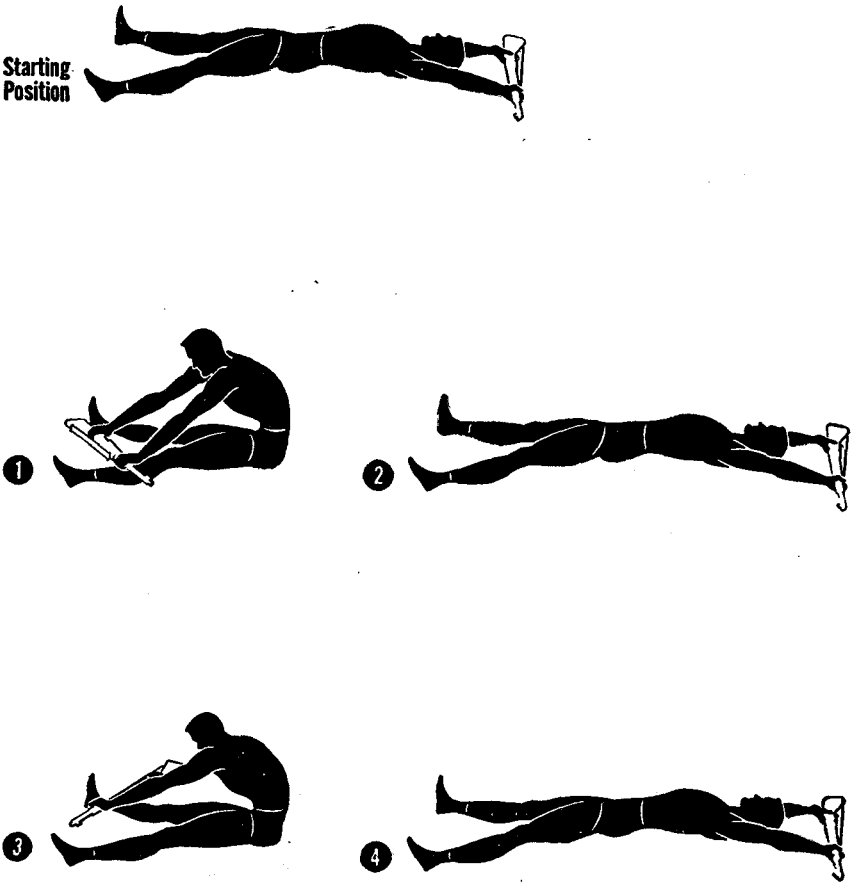

EXERCISE 7: SIT UP, LEFT AND RIGHT

Starting Position. On back, feet separated about 3 feet, rifle overhead.
Cadence. Slow.
Movement.

(1) Sit up and swing rifle forward and to left so that center of rifle is over lower left leg. Keep knees straight.
(2) Recover to starting position.
(3) Repeat count (1) to the right.
(4) Recover to starting position.

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EXERCISE 8: ROWING EXERCISE

Starting Position. Seated on ground, rifle to thrust position, legs straight and together.

Cadence. Moderate.

Movement.

(1) Bend forward and thrust rifle forward. At same time raise knees and pull feet in close to buttocks.

(2) Recover to starting position.

(3) Repeat count (1).

(4) Recover to starting position.

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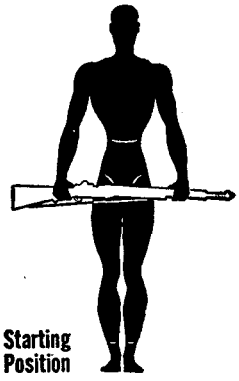
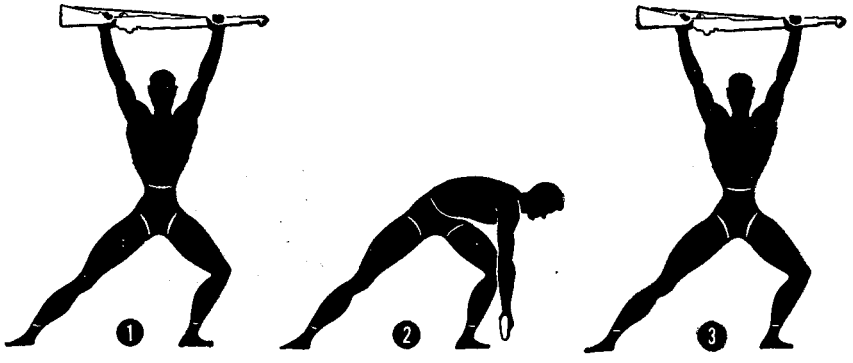
EXERCISE 9:
LUNGE SIDE, ROTATE AND BEND

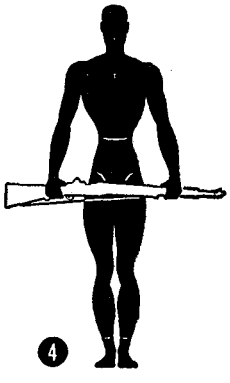


Starting Position. Rifle downward.
Cadence. Moderate.
Movement.

(1) Lunge sidewards left swinging rifle forward and upward to overhead position.
(2) Turn trunk to left and bend forward over left hip. At the same time swing rifle to low horizontal at the side of left ankle.
(3) Recover to first position.
(4) Recover to starting position.

Repeat on right side for counts (5), (6), (7), and (8).





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EXERCISE 10: SQUAT JUMPS*

Starting Position. Rifle behind shoulders, full knee bend with left foot about 8 inches in front of right foot and feet separated about 8 inches.

Cadence. Fast.

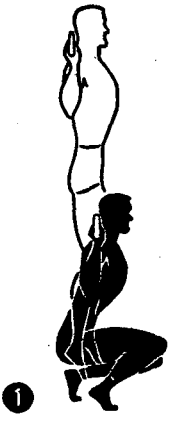
Movement.

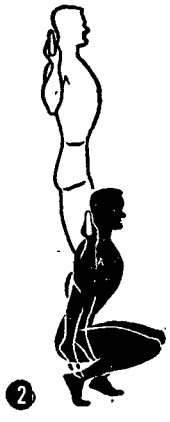
(1) Spring upward, straightening the knees and causing the feet to leave the ground. Reverse position of feet while in the air, moving right foot forward and left foot backward. Return to starting position.

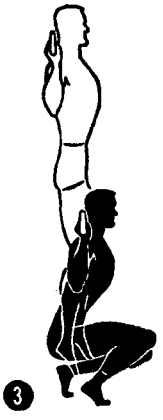
(2) Repeat count (1) reversing position of feet.

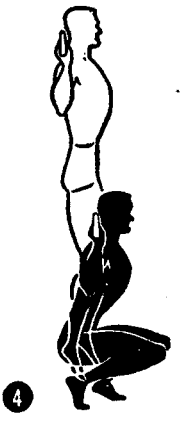
(3) Repeat count (2).

(4) Repeat count (1).









* Exercise only one-half the number of four count repetitions used for other exercises.

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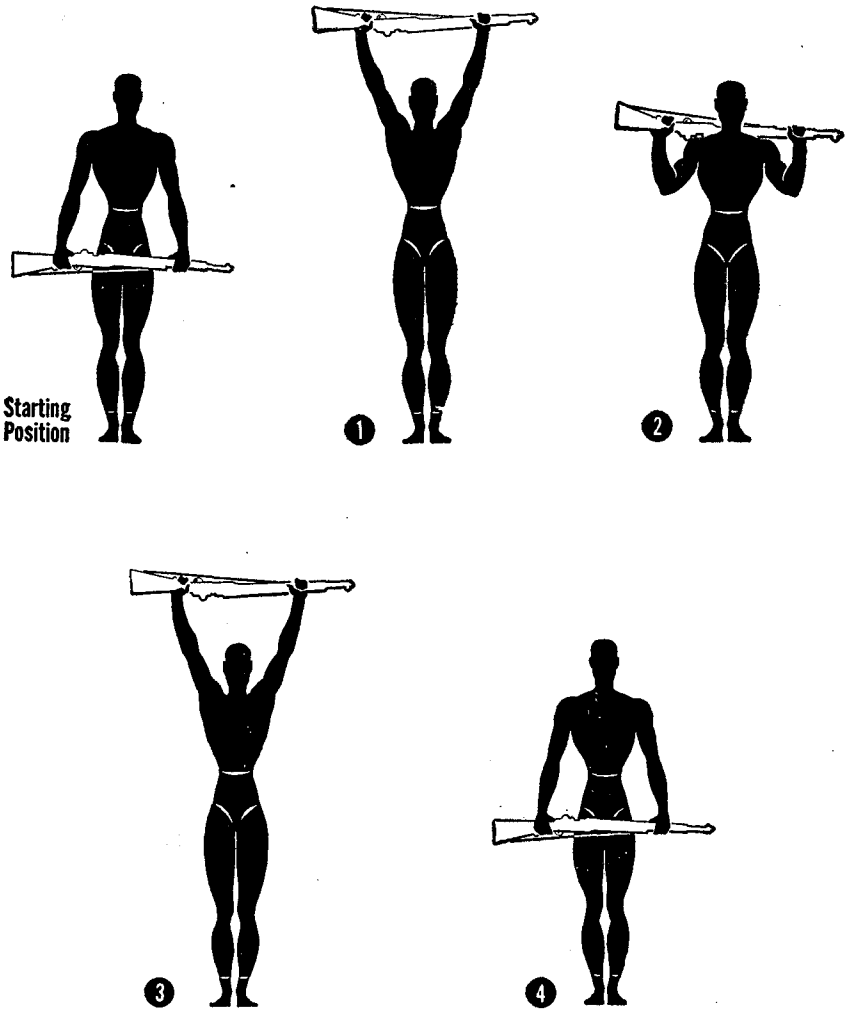

EXERCISE 11: FORE UP, BEHIND BACK

Starting Position. Rifle downward.
Cadence. Slow.
Movement.
(1) Swing arms forward and upward to overhead position. Inhale.
(2) Lower rifle to behind shoulders. Exhale.
(3) Recover to first position and inhale.
(4) Recover to starting position and exhale.

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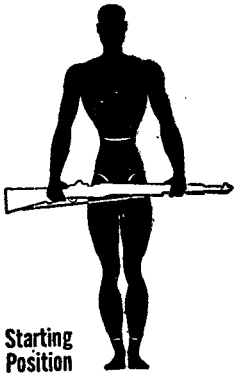
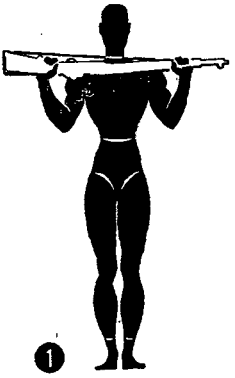
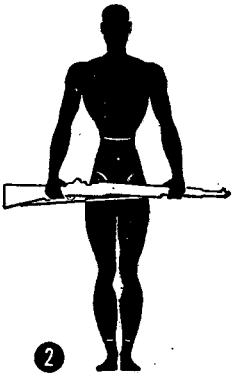
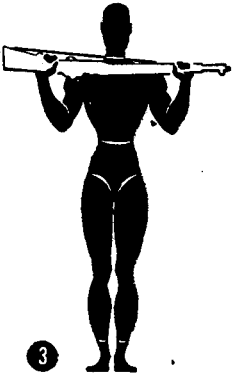
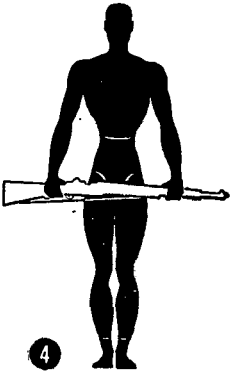








54. DRILL NO. 3. This drill is designed solely to develop the strength and endurance of the arms. It may be completed in from 5 to 6 minutes time. The cadence of all movements should be fast and the exercise continued until the arms are thoroughly tired. The drill may be done in an informal manner on a "Follow the leader" basis, with the leader demonstrating and progressing from exercise to exercise without stopping. When this practice is followed, the leader calls out the next exercise and demonstrates it on the last 4 counts of the preceding exercise.



EXERCISE 1: FLEX ELBOWS

Starting Position. Rifle downward.
Cadence. Fast.
Movement.
(1) Flex elbows to thrust position.
(2) Recover to starting position.
(3) Repeat count (1).
(4) Recover to starting position.

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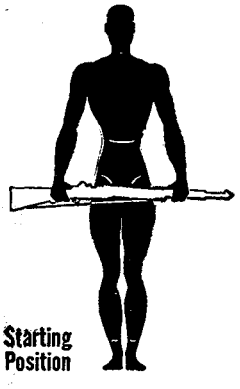
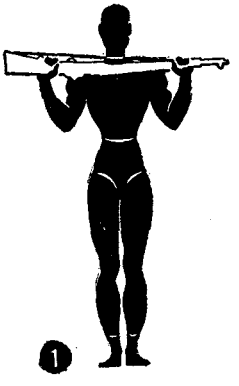
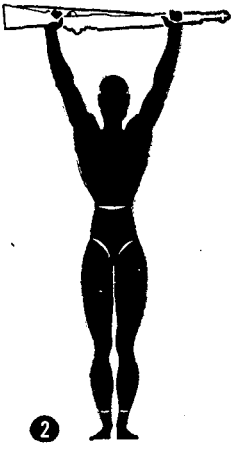
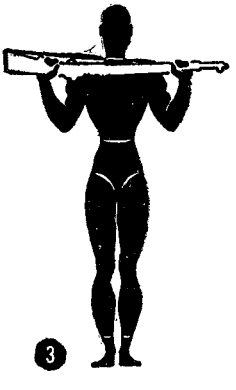
EXERCISE 2: FLEX-THRUST UPWARD

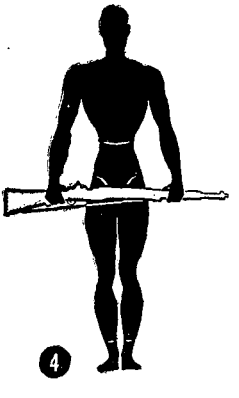
Starting Position. Rifle downward.
Cadence. Fast.
Movement.
(1) Flex elbows to thrust position.
(2) Thrust rifle upward to overhead.
(3) Recover to first position.
(4) Recover to starting position.











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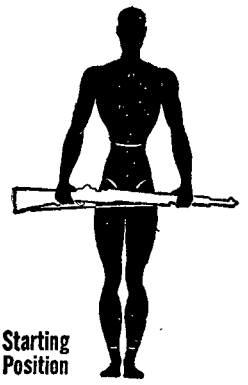
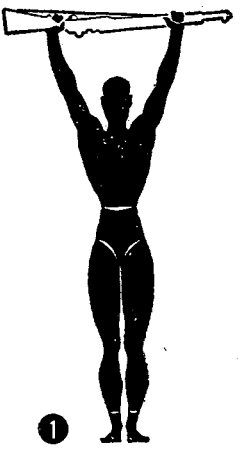
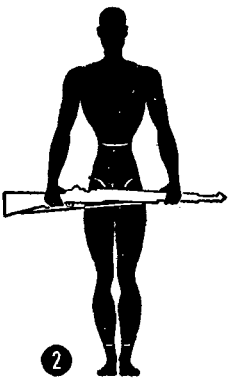
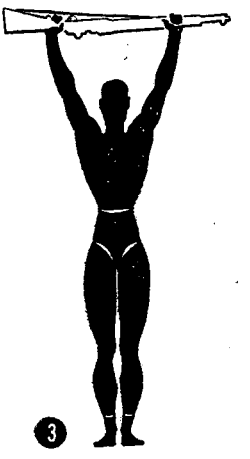
EXERCISE 3: FORE UP

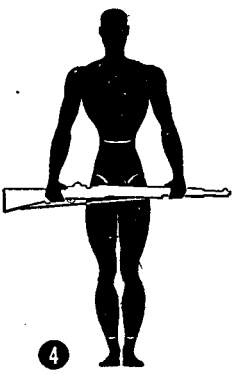


Starting Position. Rifle downward.
Cadence. Fast.
Movement.
(1) Swing arms forward and upward to overhead position. Keep elbows straight.
(2) Recover to starting position.
(3) Repeat count (1).
(4) Recover to starting position.









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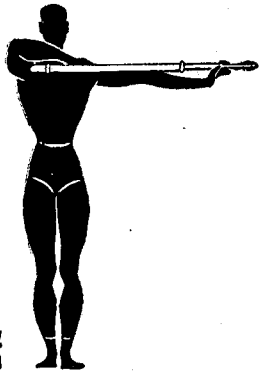
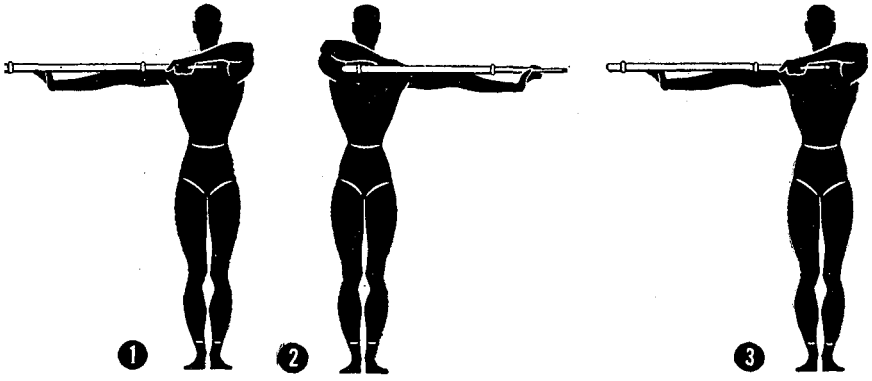
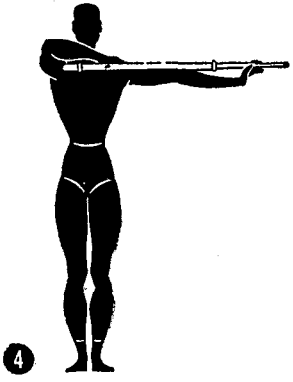


Starting Position



EXERCISE 4:
LEFT AND RIGHT-FORWARD



Starting Position. Rifle at left side horizontal, right hand in front of left shoulder, left arm sideward to the left.

Cadence. Fast.

Movement.

(1) Swing arms sideward to right, through front horizontal to the right side horizontal.

(2) Recover to starting position.

(3) Repeat count (1).

(4) Recover to starting position.

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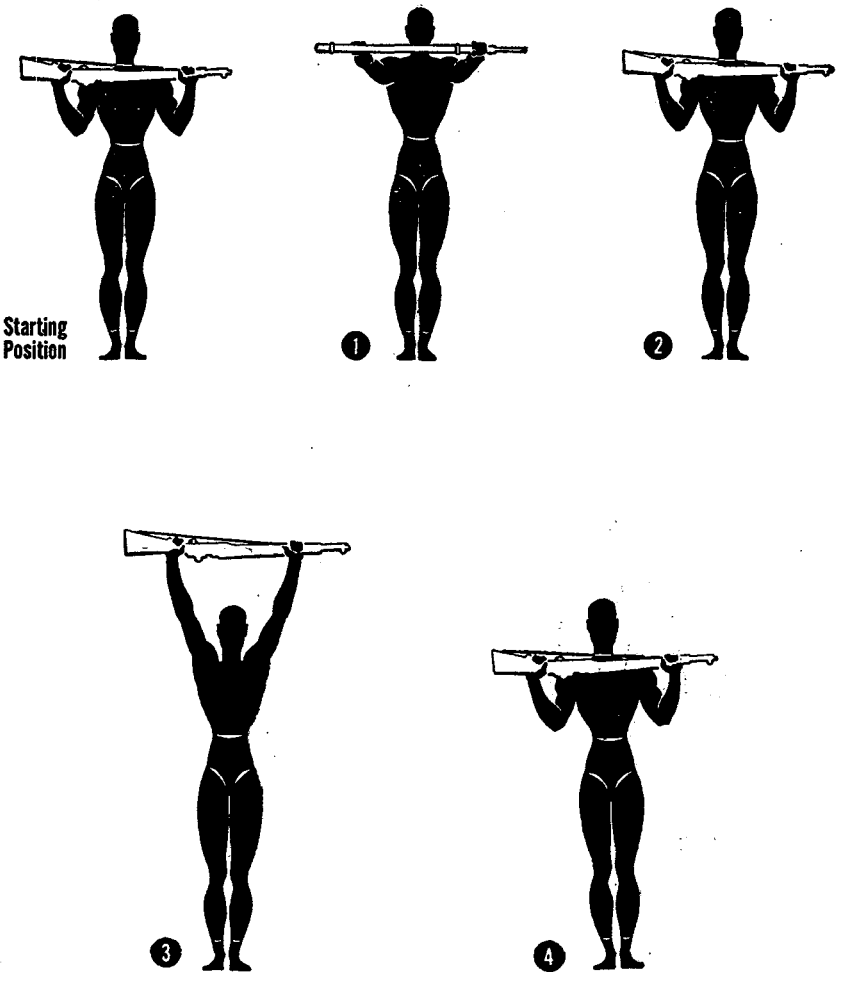

EXERCISE 5: FRONT AND UP

Starting Position. Rifle at thrust position.
Cadence. Fast.
Movement.
(1) Thrust arms forward.
(2) Recover to starting position.
(3) Thrust arms upward.
(4) Recover to starting position.

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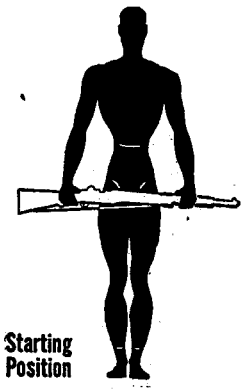
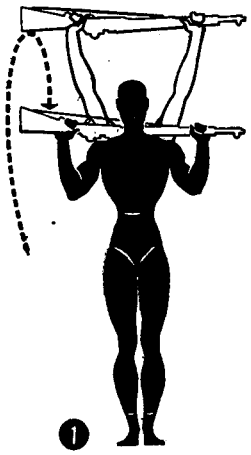
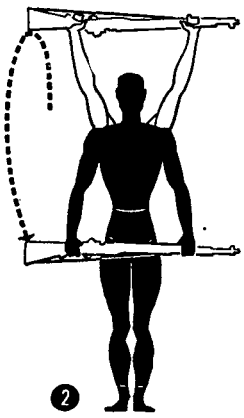
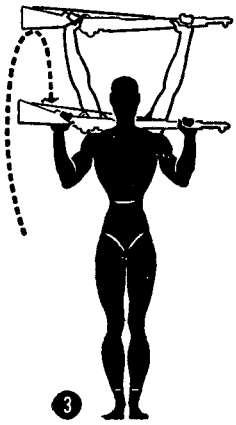
EXERCISE 6: BEHIND SHOULDERS

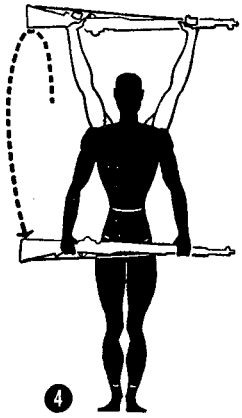
Starting Position. Rifle downward.
Cadence. Fast.
Movement.
(1) Swing rifle forward and upward to position behind shoulders.
(2) Recover to starting position.
(3) Repeat count (1).
(4) Recover to starting position.











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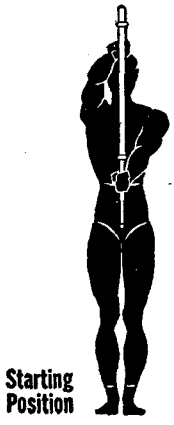
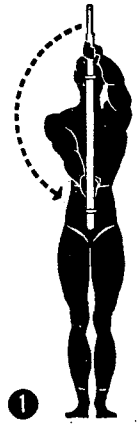
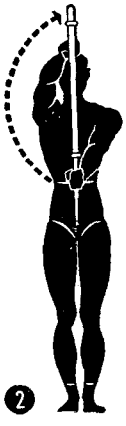
EXERCISE 7: TWIST AND TWIST

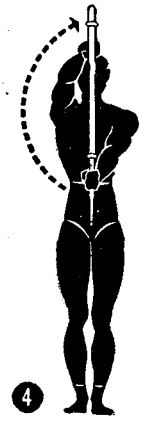
Starting Position. Rifle at front perpendicular, butt upward.
Cadence. Fast.
Movement.

(1) Reverse position of arms so that the right hand is downward, and the left hand is upward.
(2) Recover to starting position.
(3) Repeat count (1).
(4) Recover to starting position.









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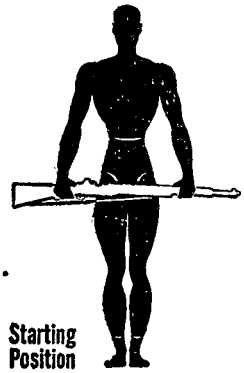
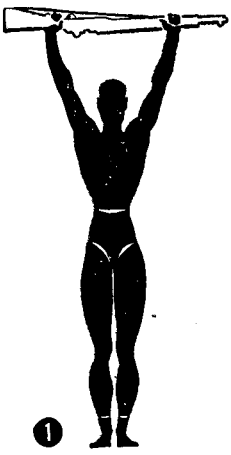
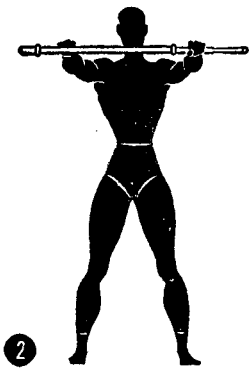
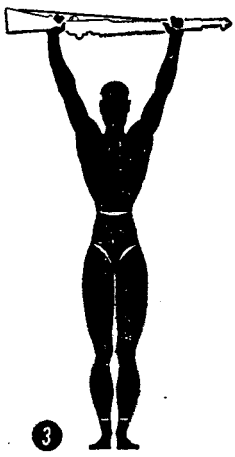




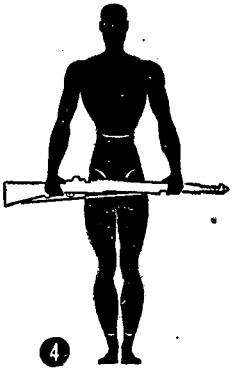




EXERCISE 8: UP AND FORWARD

Starting Position. Rifle downward.
Cadence. Fast.
Movement.

(1) Swing arms forward and upward to overhead.
(2) Swing arms forward.
(3) Recover to first position.
(4) Recover to starting position.



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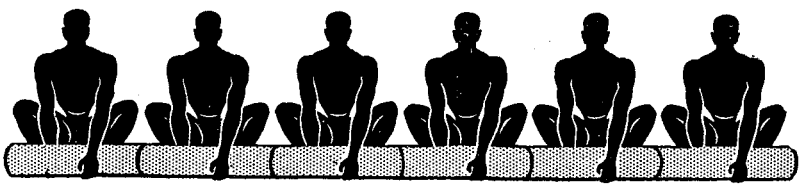
CHAPTER 6

LOG EXERCISES

55. GENERAL. Log exercises are excellent activities for developing strength and muscular endurance because they require the muscles to contract under maximum loads. The set of log exercises in paragraph 58 may be used in lieu of the basic conditioning exercises (pars. 49 and 50). Using them two or three times a week in 15 to 20 minute periods, provides a welcome change in the physical training program. However, log exercises should not be introduced until the men have become well-conditioned. The progression and dosage recommended for log exercises is the same as for conditioning exercises. (See par. 38.)

56. SPECIFICATIONS OF LOGS. The logs should be from 6 to 8 inches in diameter. They may vary in length from 14 feet (for 6 men) to 18 feet (for 8 men). They should be skinned, smoothed, and dried. The 14 foot logs should weigh approximately 300 pounds; and the 18 foot ones, 400 pounds. Rings should be painted on the log to indicate each man's position.

57. STARTING POSITIONS AND COMMANDS. The men fall in, facing the log and about 4 inches from it. All men assigned to the same log should be approximately the same height. The basic starting positions and commands are as follows:



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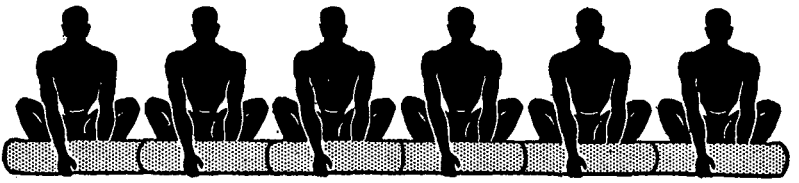
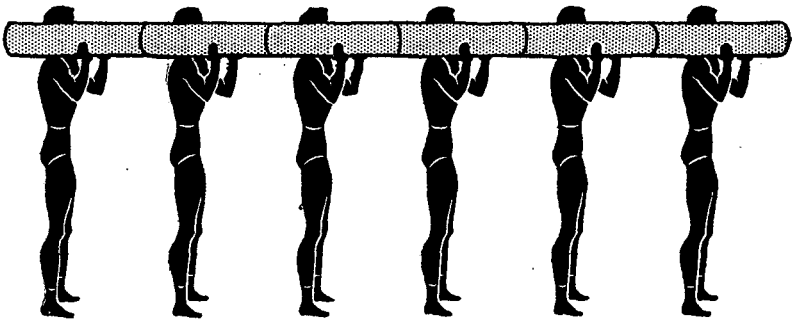
a. 1. Starting Position. 2. MOVE. At the command MOVE, move the left foot smartly 12 inches to the left and lower the body into a flat-foot squat. Keep the back flat, head up, and arms between the legs. Encircle the far side of the log with the left hand. Keep the right hand underneath the log. This position is standard unless ordered otherwise.

b. 1. Left Hand Starting Position. 2. MOVE. This command is executed in the same manner as *a* above except that the left hand is underneath the log and the right hand encircles the far side of the log.



c. 1. Right Shoulder Position. 2. MOVE. At the command pull the log upward in one continuous motion to the right shoulder. At the same time move the left foot to the rear and stand up facing left. Balance the log on the right shoulder with both hands.



d. 1. Left Shoulder Position. 2. MOVE. This command should be given from the Left Hand Starting Position. At the command MOVE, pull the log upward in one continuous motion to the left shoulder. At the same time move the right foot to the rear and stand up facing right. Balance the log on the left shoulder with both hands.

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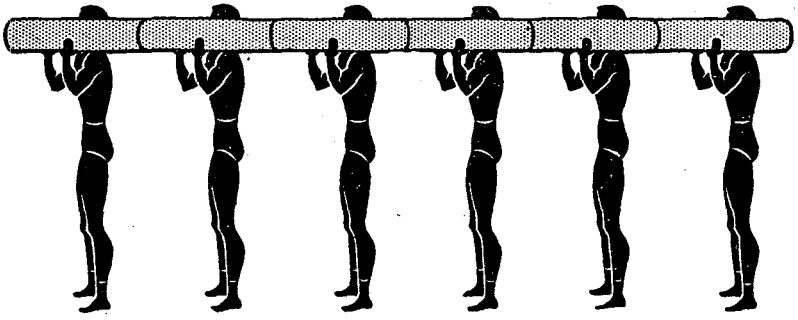
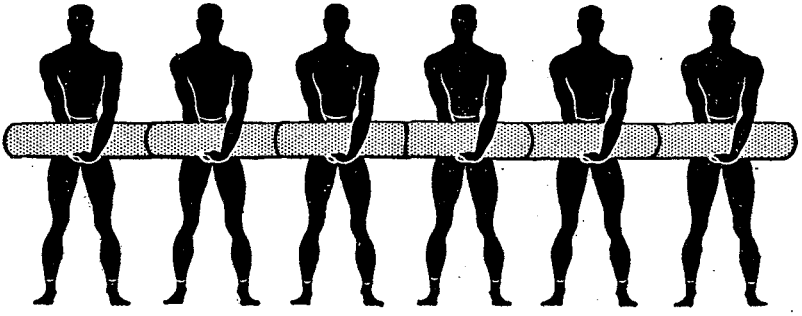
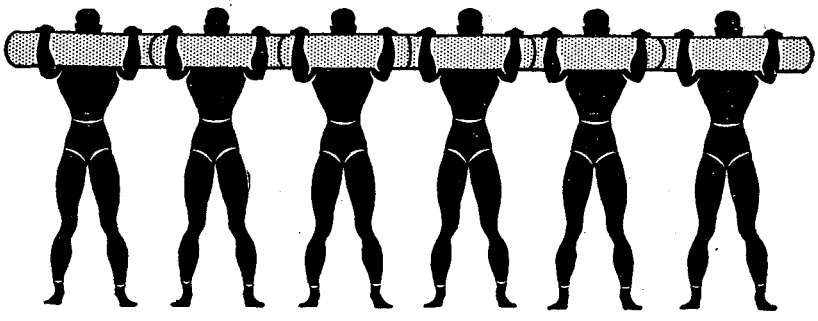


e. 1. Waist Position. 2. MOVE. From the standard starting position pull the log waist high. Keep the arms straight and fingers laced underneath the log. The body is inclined slightly to the rear, and the chest is lifted and arched.



f. 1. Chest Position. 2. MOVE. This command should be given after the waist position has been assumed. At the command MOVE, shift the log to a position high on the chest, bring the left arm under the log and hold it in the bend of the arms. Keep the upper arms parallel to the ground.



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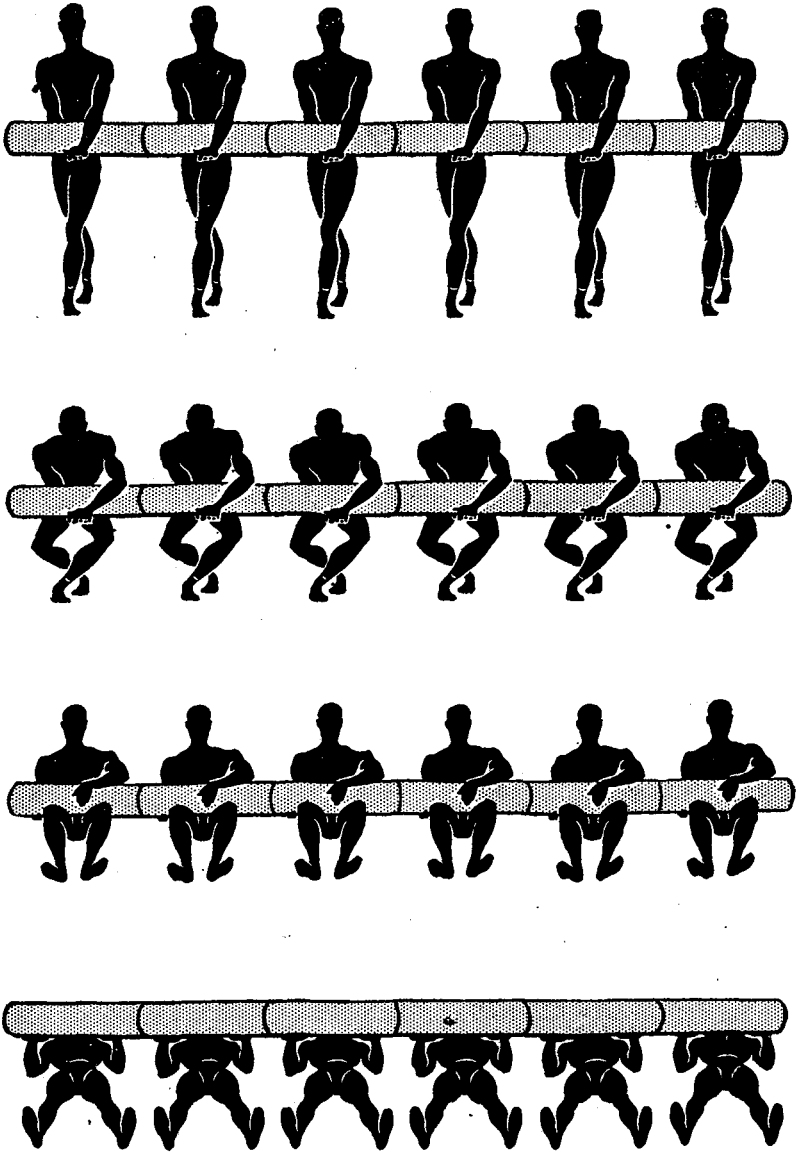
g. To move the log from the right shoulder to the left shoulder the command is: 1. Left Shoulder Position. 2. MOVE. Upon this command push the log overhead and lower it to the opposite shoulder.

h. 1. Supine Position. 2. MOVE. This command is given after the waist position has been assumed. Upon this command cross the legs and sit upon the ground. Assume the supine position with the log resting upon chest and hands. Feet are apart.



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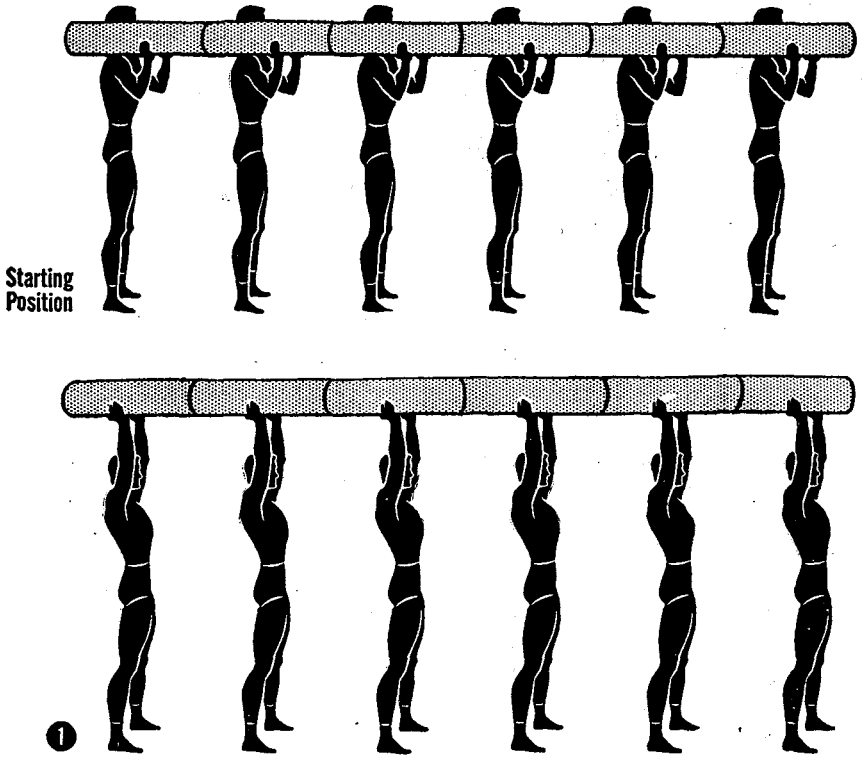
i. 1. Starting Position. 2. MOVE. This command is given to return the log to the ground from any of the above positions. Upon this command slowly lower the log to the ground. The hands and fingers must be kept from under the log.

58. LOG ACTIVITIES. a. Log exercises. (Where ground conditions make a regular exercise impracticable, the substitute exercise is indicated by addition of "A".)

EXERCISE 1: TWO ARM PUSH UP

Starting Position. Right or left shoulder position. Feet apart.
Cadence. Moderate.
Movement.
(1) Push log overhead.
(2) Lower the log to opposite shoulder.
(3) Repeat count (1).
(4) Recover to starting position.



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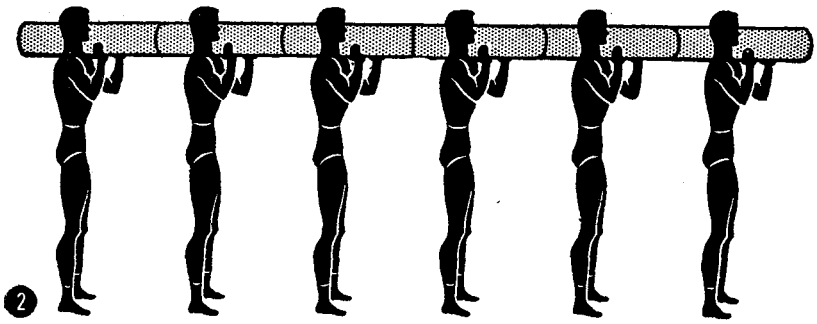

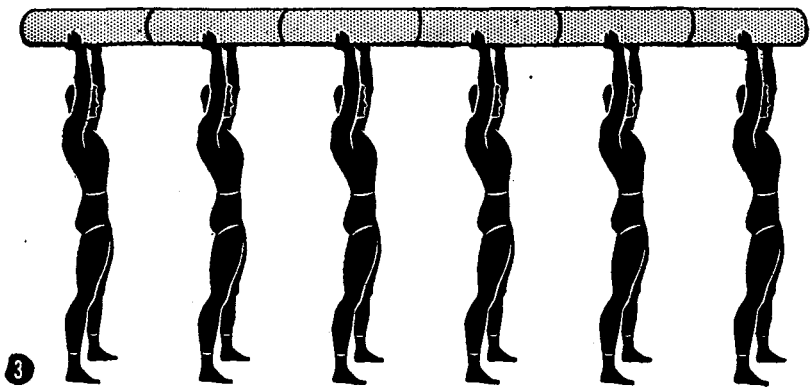

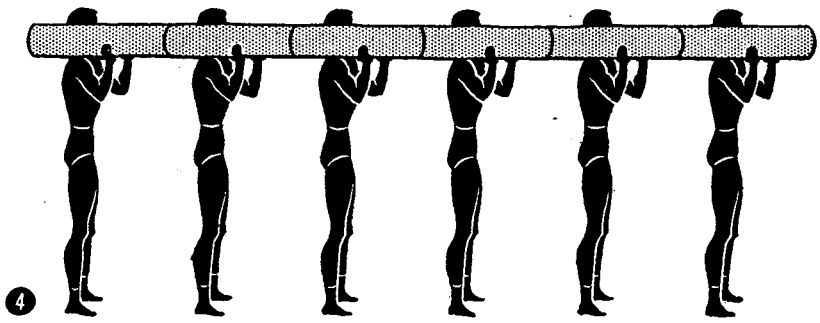

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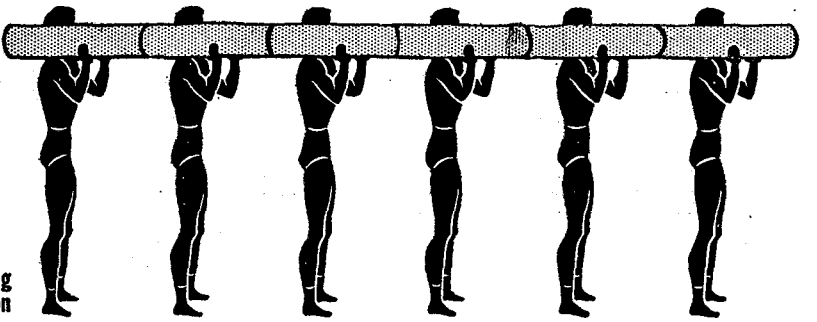
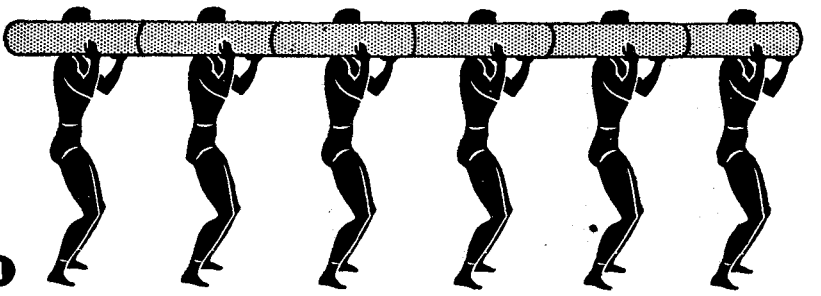
EXERCISE 2: FOUR COUNT KNEE BEND

Starting Position. Right or left shoulder position. Feet apart.
Cadence. Slow.
Movement.
(1) Lower the body to a quarter squat position.
(2) Lower the body to a half squat position.
(3) Lower the body to full squat position.
(4) Recover to starting position.



Starting Position



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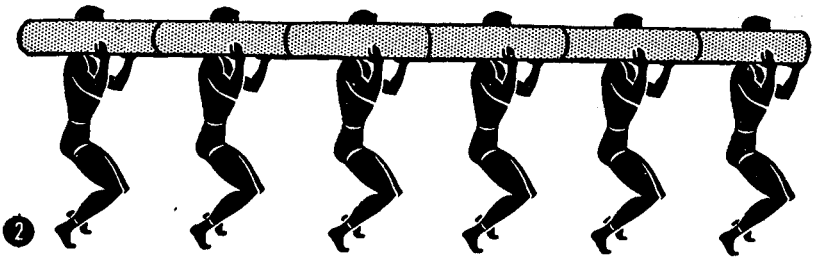

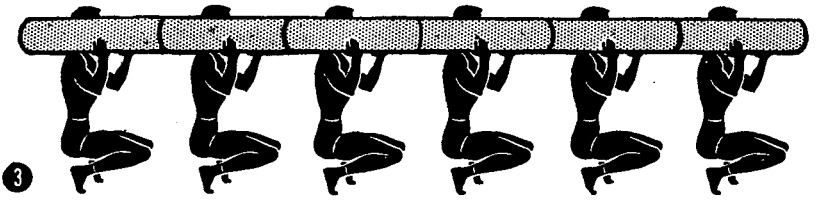

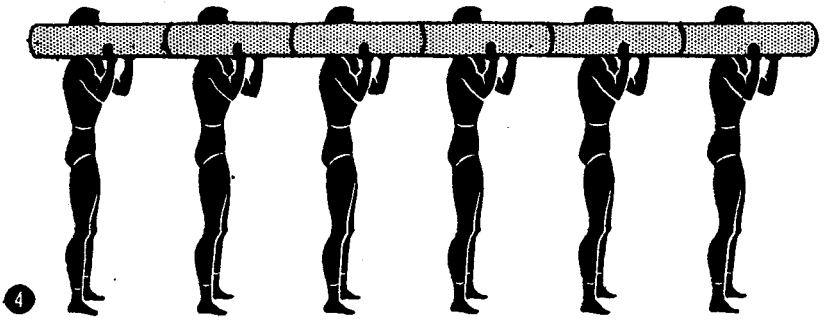

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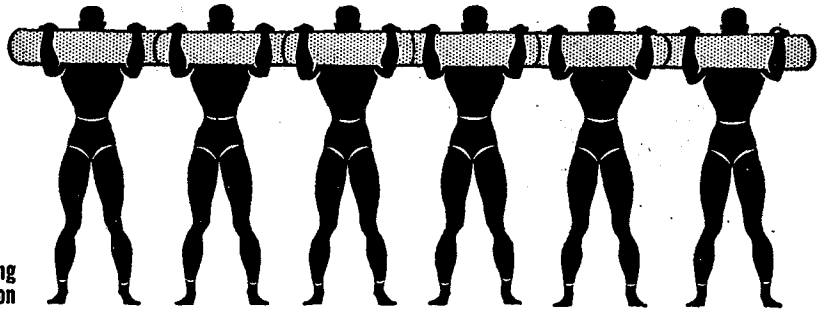
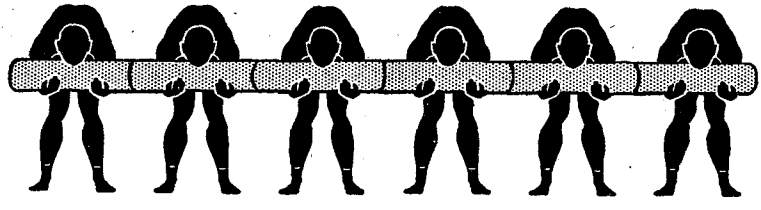
EXERCISE 3: FORWARD BENDER

Starting Position. Chest position. Feet apart.
Cadence. Moderate.
Movement.
(1) Bend forward at the hips, keeping the back and legs straight.
(2) Recover to starting position.
(3) Repeat count (1).
(4) Recover to starting position.



Starting Position



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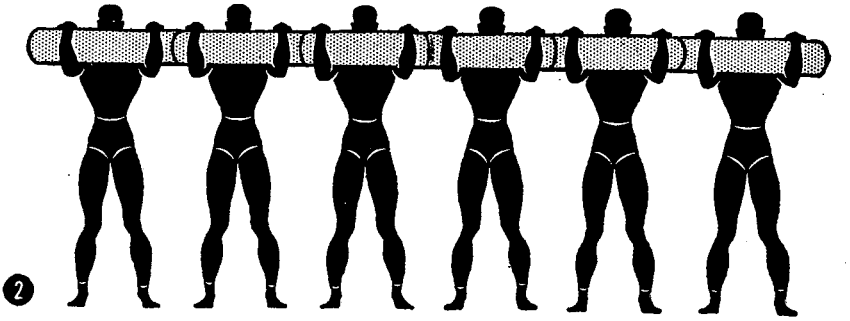

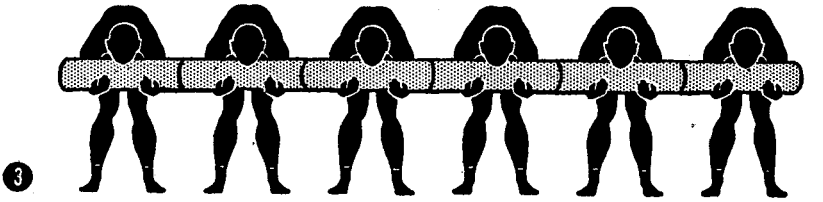

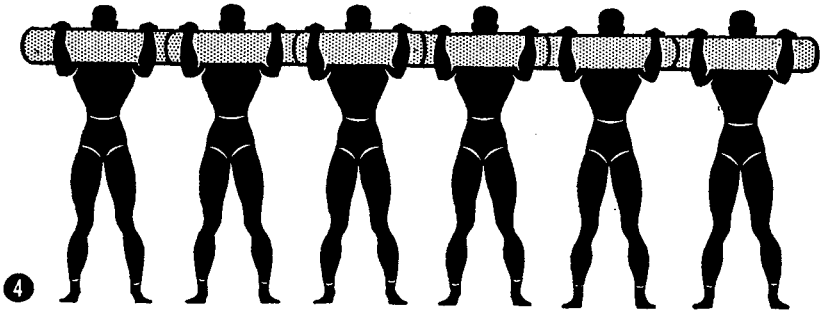

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EXERCISE 4: OVERHEAD TOSS.

Starting Position. Right or left shoulder position, feet apart. The knees are bent to a position of a quarter squat.

Cadence. Moderate.

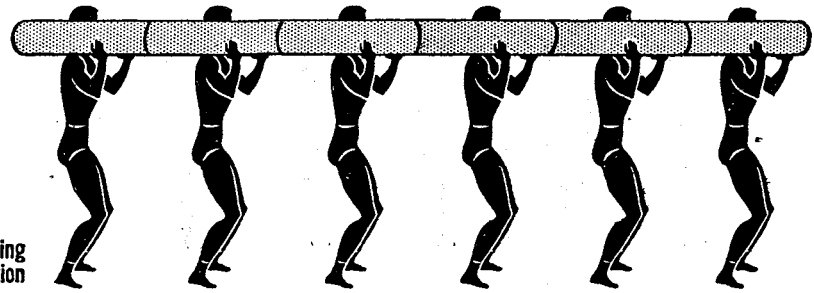
Movement.

(1) Extend knees and toss log into the air. Catch log with both hands and lower it toward the opposite shoulder. As the log is caught lower the body into a quarter squat.

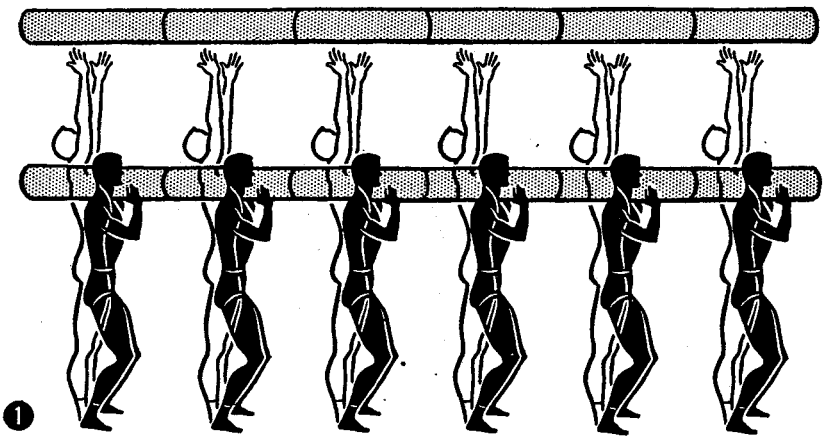
(2) Toss the log into the air again and return it to the original shoulder. Lower body to a quarter squat position.

(3) Repeat count (1).

(4) Recover to starting position.



Starting Position



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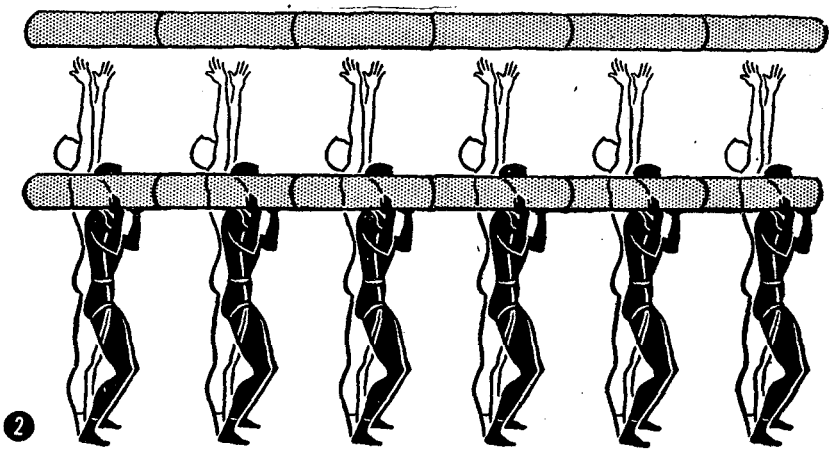

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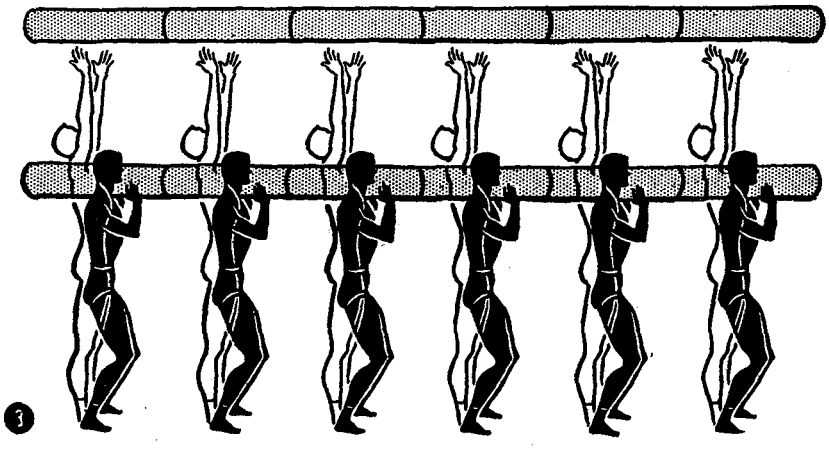

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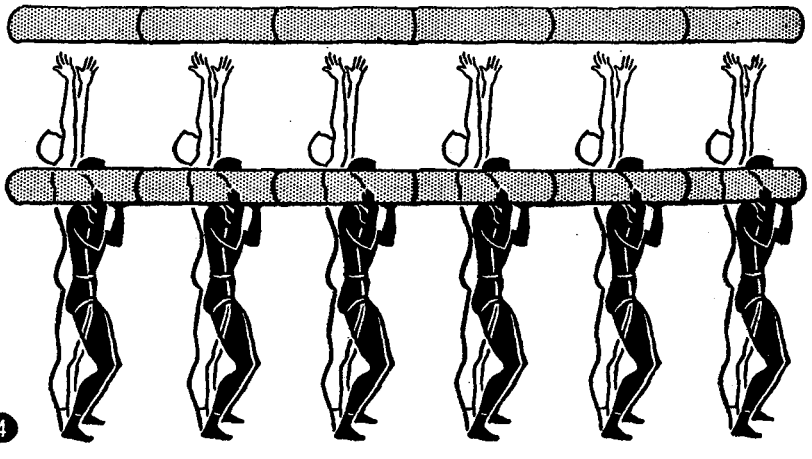

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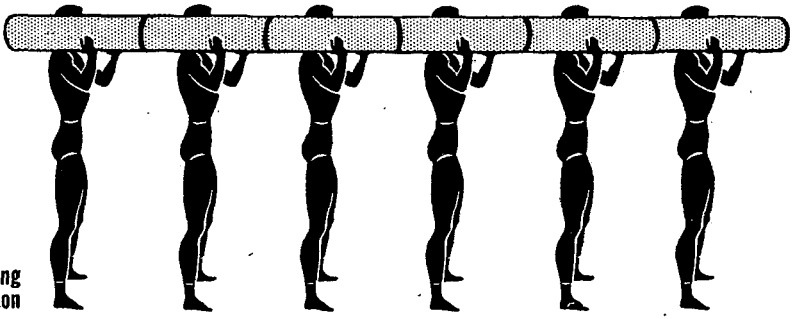
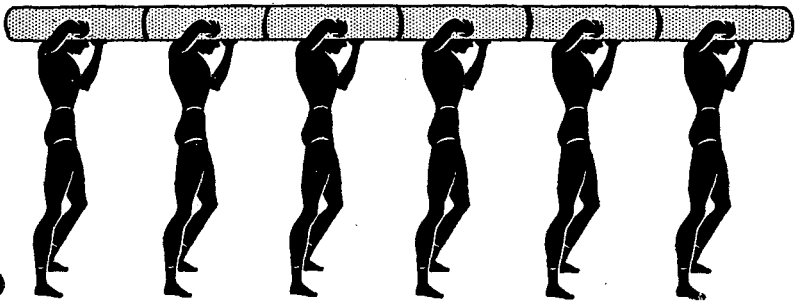
EXERCISE 5: SIDE BENDER

Starting Position. Right shoulder position, feet 24 inches apart.
Cadence. Moderate.
Movement.
(1) Bend sideward to the left, bending left knee.
(2) Recover to starting position.
(3) Repeat count (1).
(4) Recover to starting position.

After completing the required number of repetitions, change shoulders and execute an equal number of repetitions to the other side.



Starting Position



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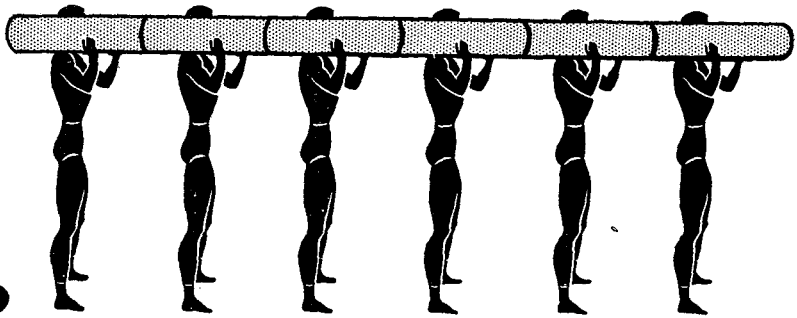

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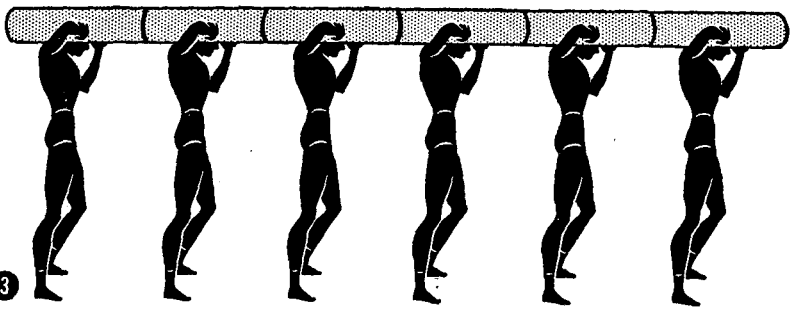

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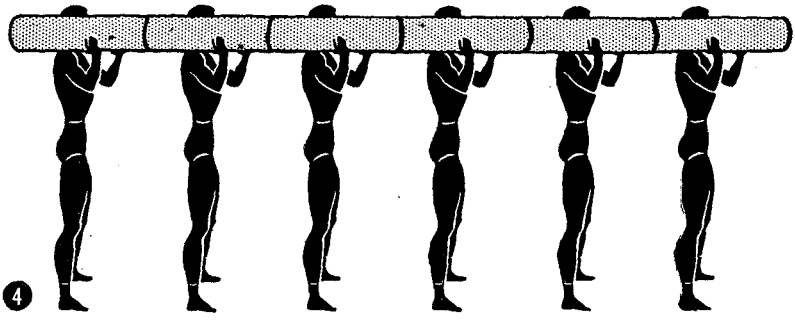

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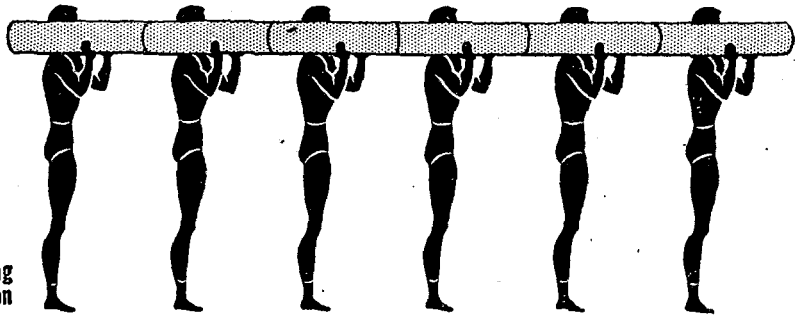
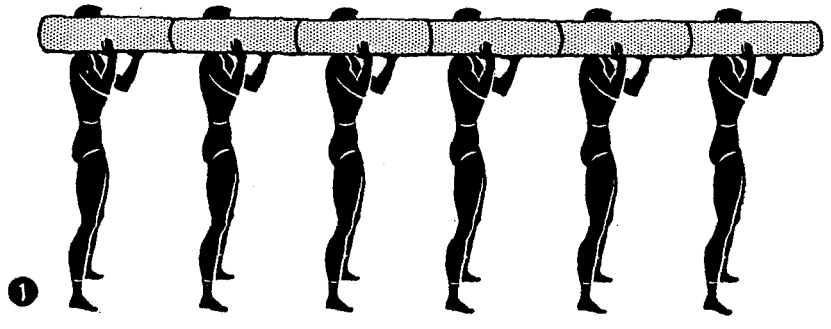
EXERCISE 6: STRADDLE JUMP

Starting Position. Right or left shoulder position, feet together.
Cadence. Moderate.
Movement.
(1) Jump to side straddle position. Pull down on log with both hands to keep it from bouncing on the shoulder.
(2) Recover to the starting position.
(3) Repeat count (1).
(4) Recover to starting position.





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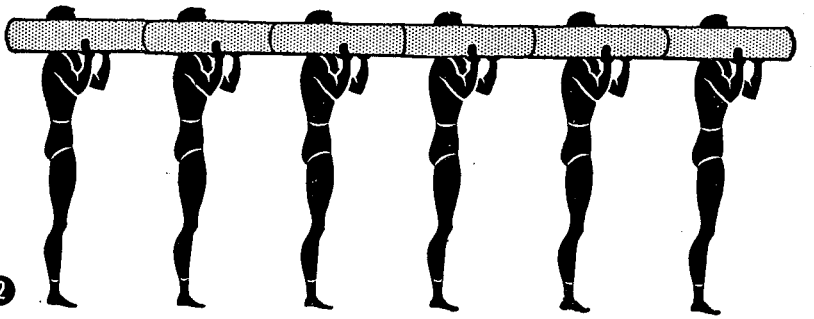

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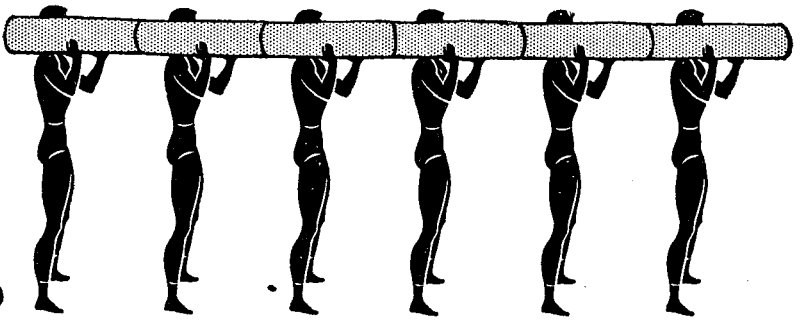

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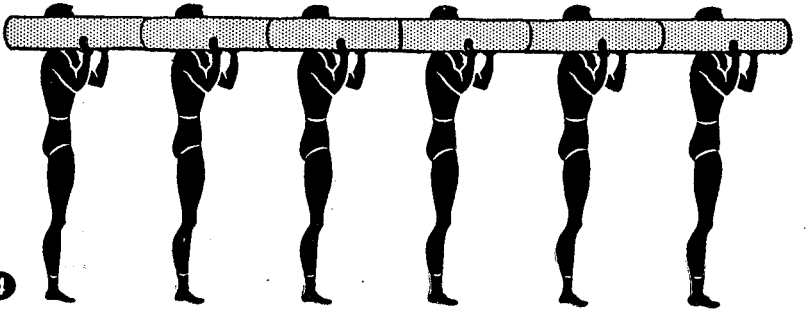

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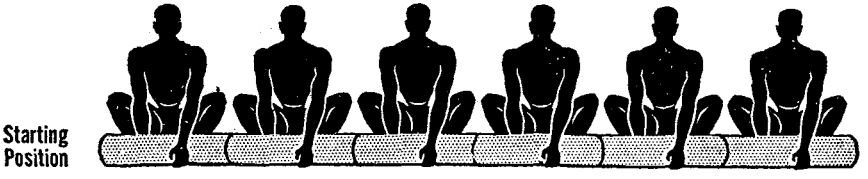
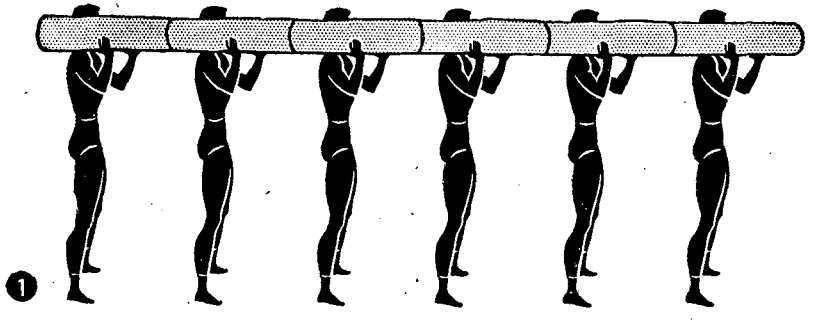
EXERCISE 7: TWELVE COUNT PUSH UP.

Starting Position. Starting position.
Cadence. Moderate.
Movement.
(1) Lift the log to the right shoulder.
(2) Push it overhead with both hands.
(3) Lower it to left shoulder.
(4) Repeat count (2).
(5) Lower to right shoulder.
(6) Recover to starting position.
(7) Change to left hand starting position without command and lift log to left shoulder.
(8) Repeat count (2).
(9) Repeat count (5).
(10) Repeat count (2).
(11) Repeat count (3).
(12) Recover to starting position.





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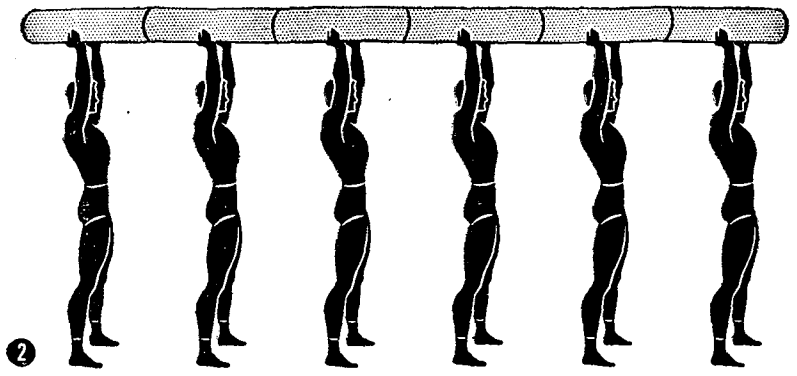

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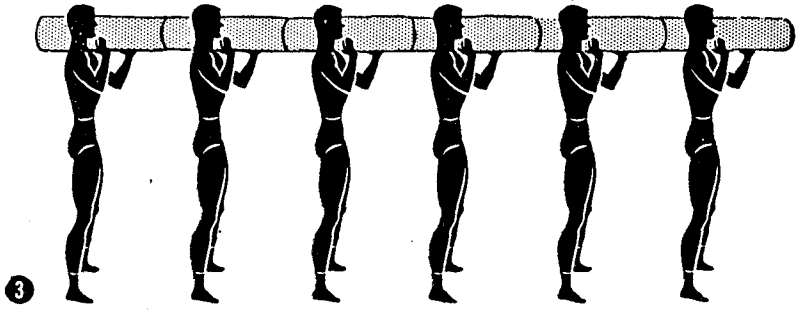

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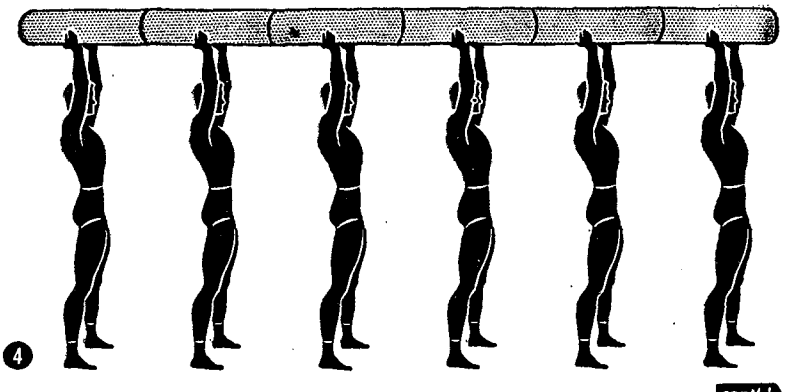

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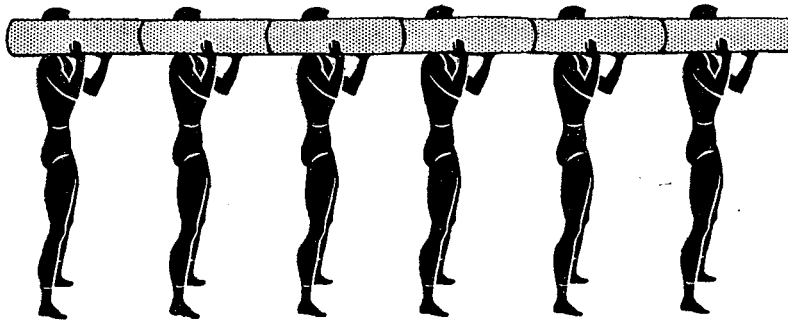

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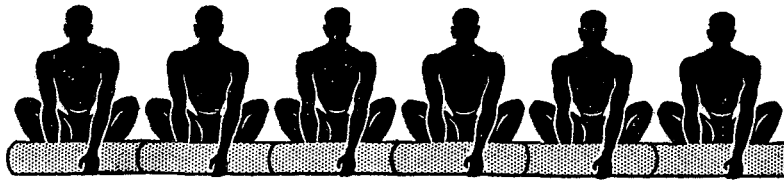

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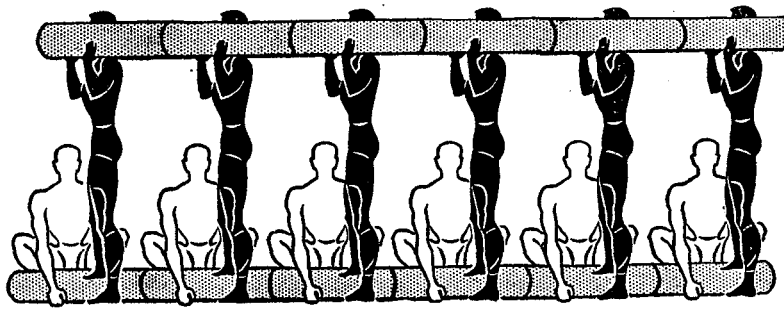

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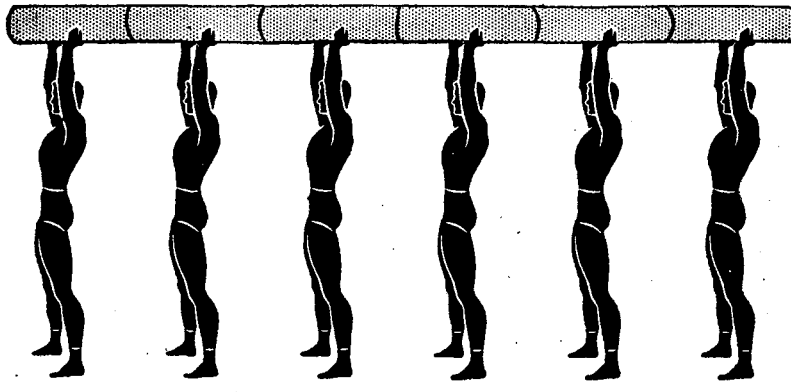

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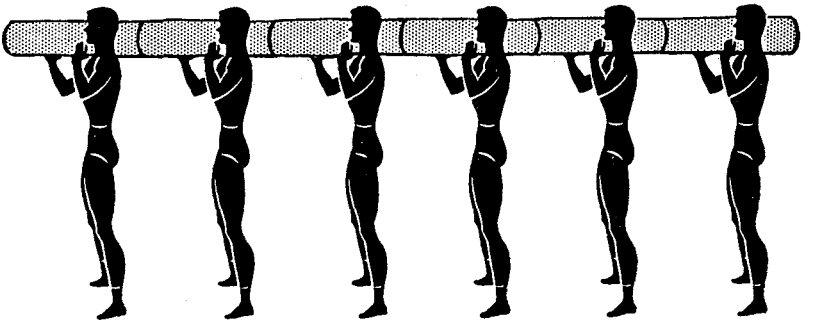

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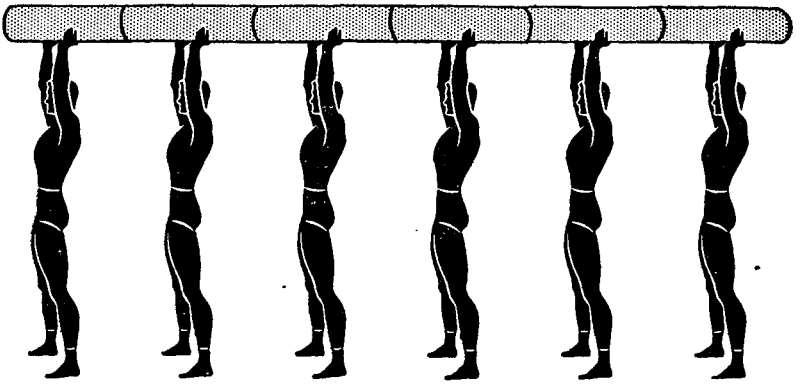

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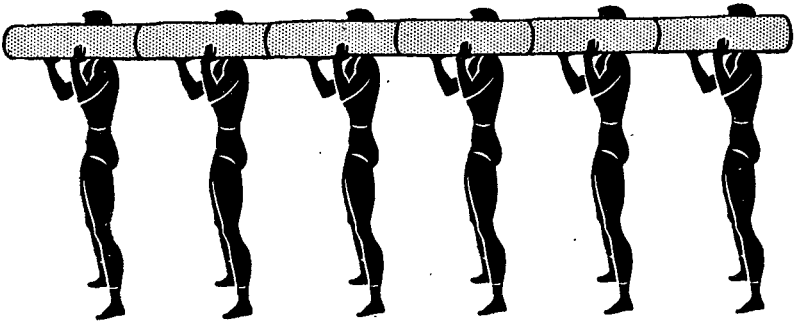

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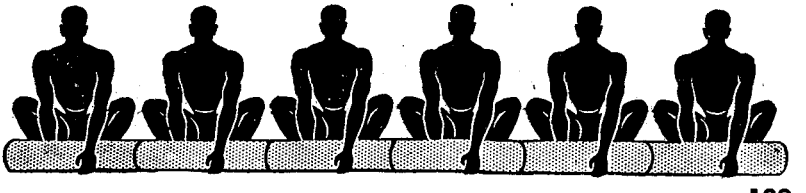

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EXERCISE 8: FLAT FOOT SQUAT

Starting Position. Right or left hand starting position with fingers under log as far as possible, arms straight.

Cadence. Moderate.

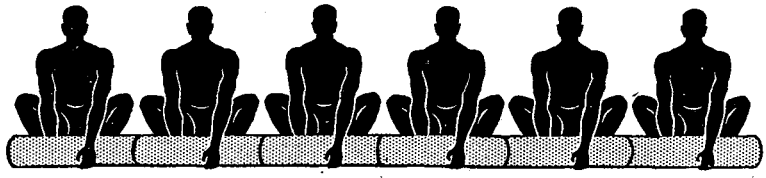
Movement.

(1) Rise to erect position and lift log waist high. Keep back straight. Lift with the legs.

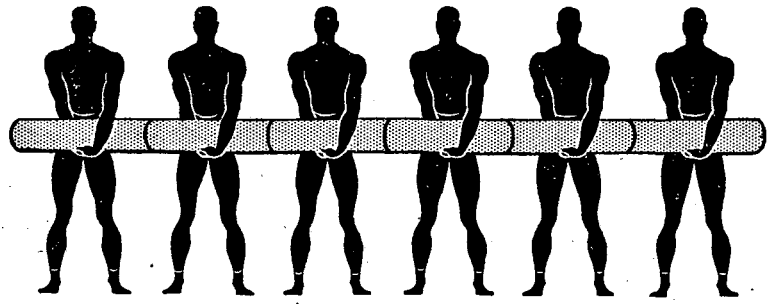
(2) Recover to starting position.

(3) Repeat count (1).

(4) Recover to starting position.



Starting Position



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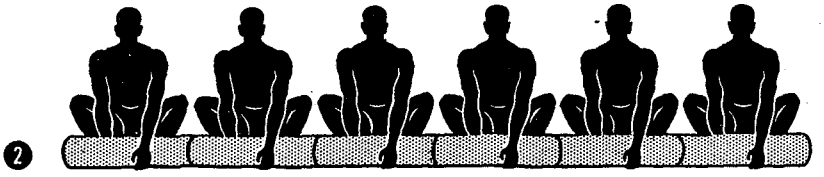

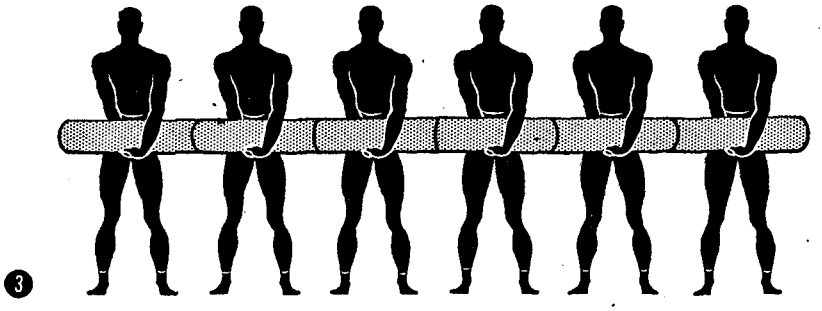

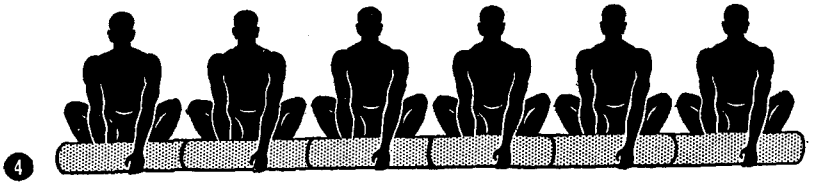

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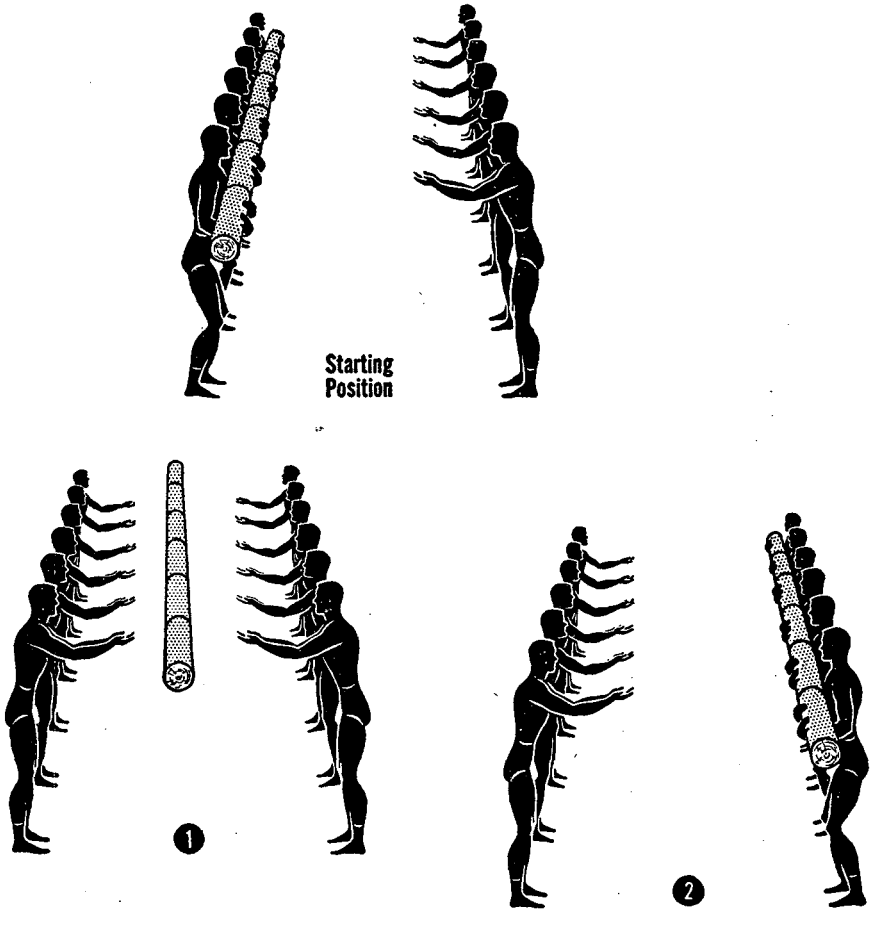
EXERCISE 9: TEAM TOSS

Starting Position. Two teams of six men stand facing each other three to six paces apart. From the waist position Team A holds the log with an underhand grip in the bend of both arms. Back is straight, knees are bent slightly.
Cadence. Slow.
Movement.

At the preparatory command *ready,* Team A sinks into a quarter squat position. At the command TOSS, Team A tosses the log out and up by a combined drive of the arms and legs. The log is caught by Team B which in turn tosses it back. The distance between teams may be gradually increased and then diminished again.



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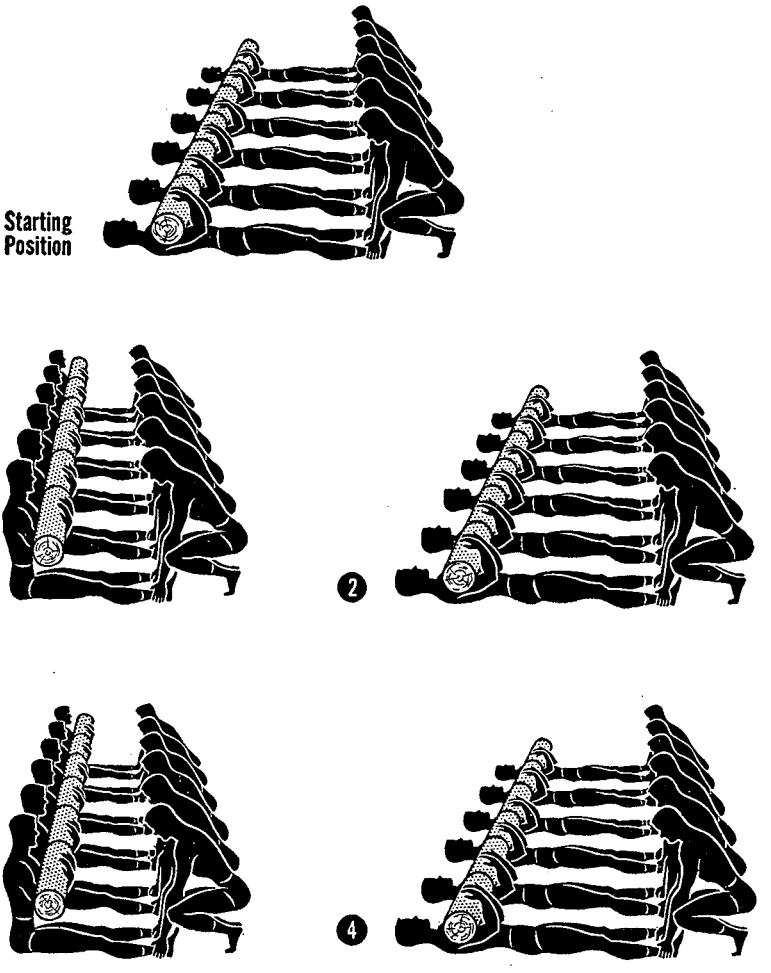

EXERCISE 10: SITUP

Starting Position. Team A in supine position, holding log in bend of arms above chest. Team B squats and holds ankles of Team A.

Cadence. Moderate.

Movement.

(1) Team A sits up holding log.

(2) Team A recovers to starting position.

(3) Repeat count (1).

(4) Team A recovers to starting position.

After completing required number of repetitions, Teams A and B exchange positions.

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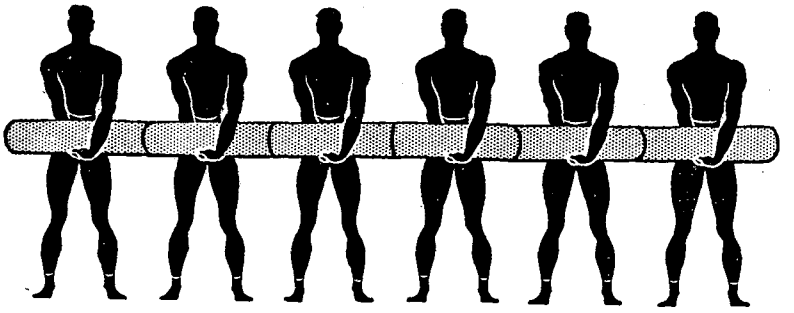
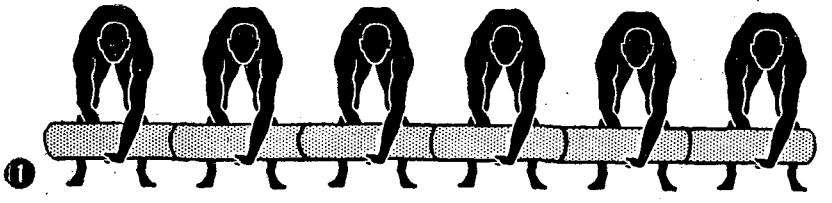
EXERCISE 10A: DEAD LIFT

Starting Position. Waist position, feet apart.
Cadence. Moderate.
Movement.

(1) Lower the log until it is 6 inches above the ground. Keep the knees straight. Exhale.
(2) Recover to starting position. Inhale.
(3) Repeat count (1).
(4) Recover to starting position.



Starting Position



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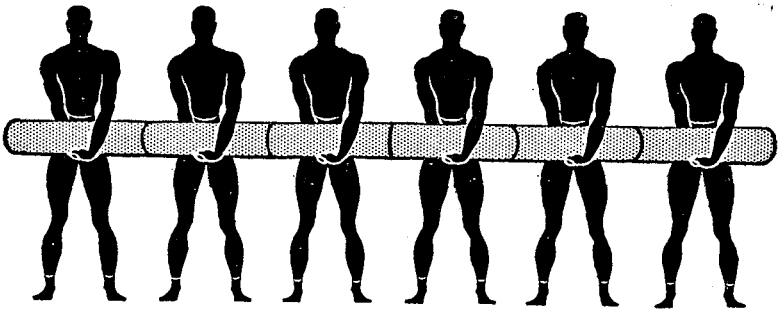

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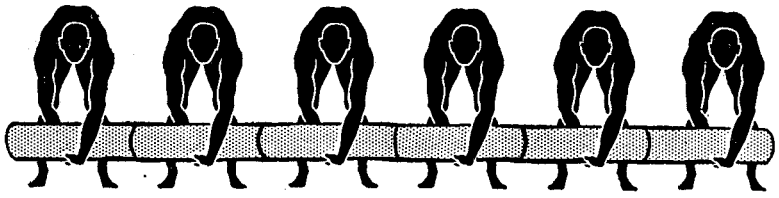

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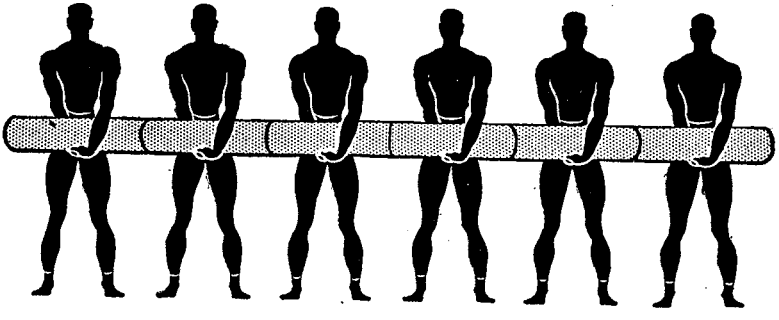

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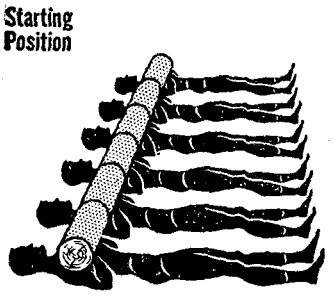
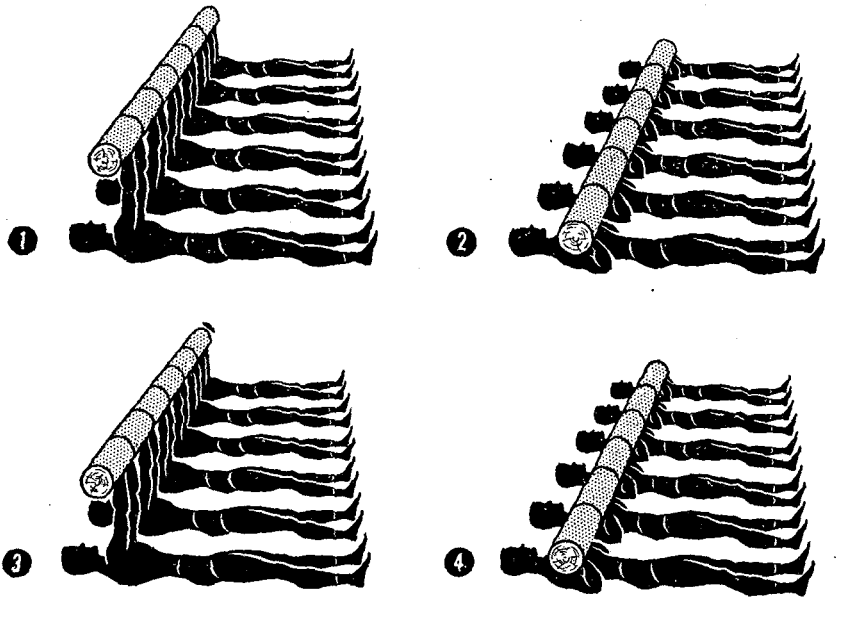
EXERCISE 11: SUPINE PUSH UP

Starting Position. Supine position with log resting on chest, hands underneath the log.
Cadence. Moderate.
Movement.
(1) Push log straight up.
(2) Recover to starting position.
(3) Repeat count (1).
(4) Recover to starting position.





EXERCISE 11A: CHEST PULL

Starting Position. Feet apart, body inclined forward at a right angle from the hips. Log held with both hands which are hanging straight down from the shoulders. Knees straight.
Cadence. Moderate.

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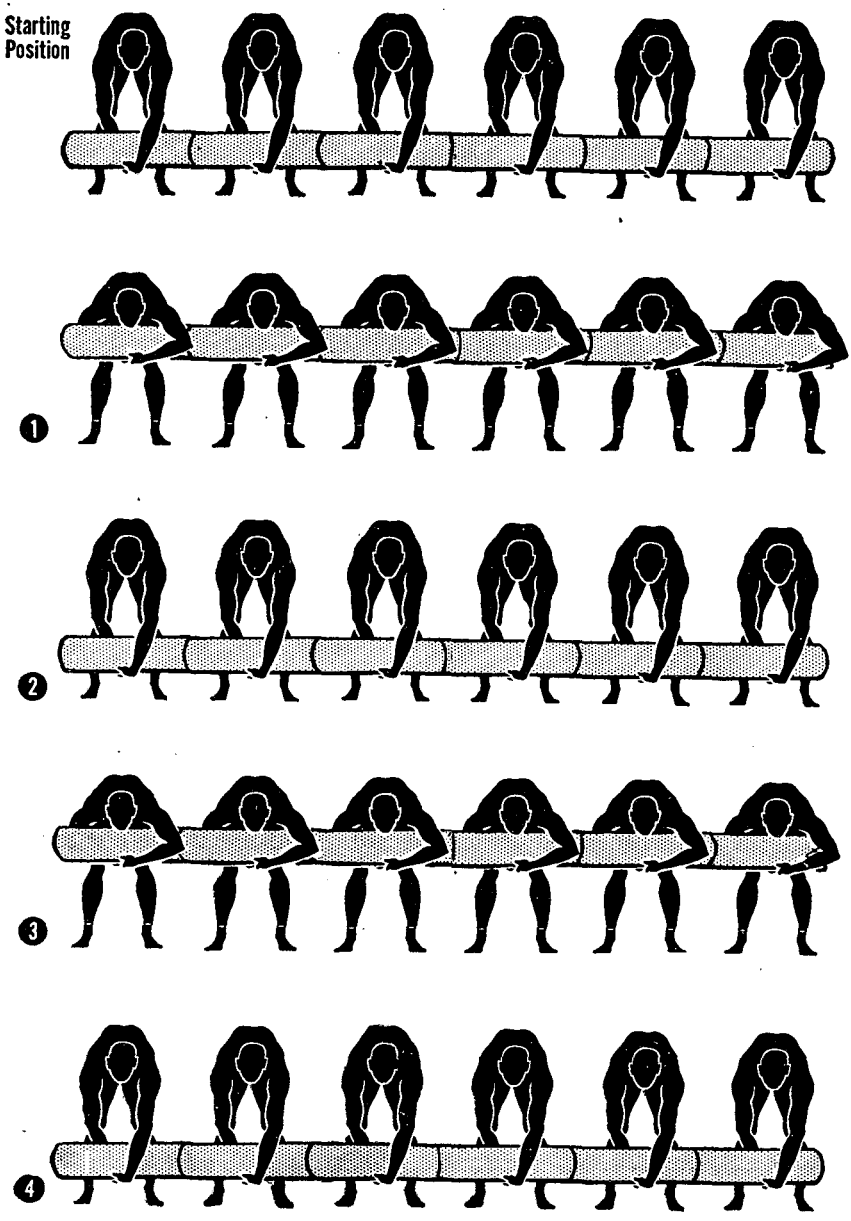
Movement.

(1) Pull the log up until it touches the chest. Inhale.
(2) Lower the log to hanging position. Do not move the body. Exhale.
(3) Repeat count (1).
(4) Recover to starting position.



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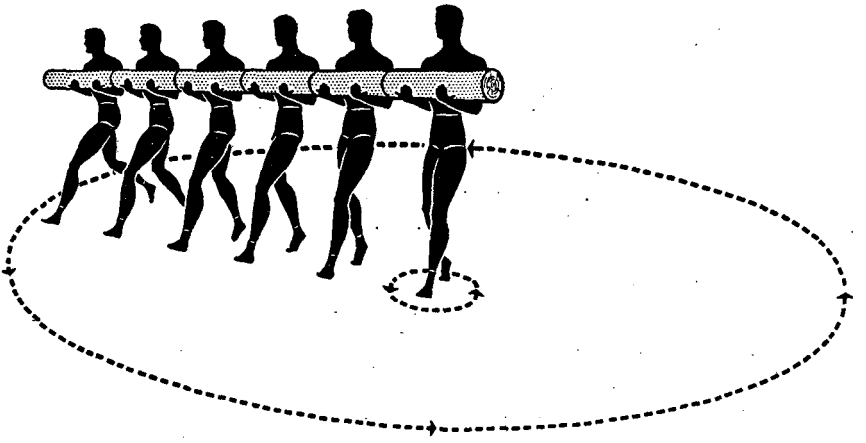
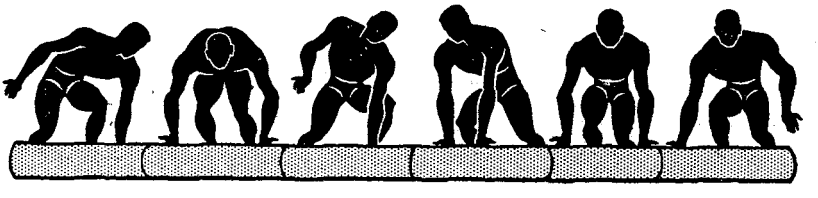
b. Log Contests.

(1) PIVOT CIRCLE. The log is held in the bend of the arms in front of the chest. At the command, 1. Circle Right, 2. MOVE, the left flank man holds the pivot and the log is carried around 360° back to original position. This movement may also be performed to the left and at double time. Commands may be given rapidly such as, Circle Right, Circle Half-Right, Circle Half-Left, etc. Competition is keen if the teams attempt to beat each other in performing these various movements.



(2) ROLLING RACE. Each team tries to roll its log a measured distance by pushing log with hands and driving forward with the legs. The first team to get the entire length of the log across the finish line wins.



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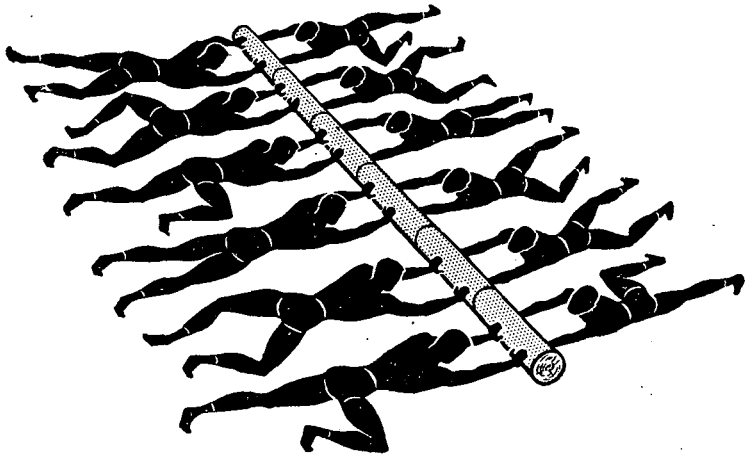
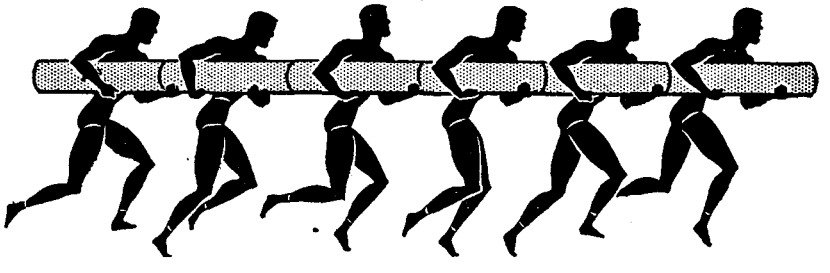
(3) **PRONE PUSH CONTEST.** Two teams lie prone, facing each other with a log between them. Both teams place their hands against the log, keeping their arms straight. Then by driving with the legs, each team attempts to push the other a measured distance to the rear.



(4) **SHUTTLE RELAY RACE.** This relay race is run by pairs of teams, each pair consisting of a Team A and a Team B. Team A members run 50 yards with the log held under their right arms. At the distance line they give the log to Team B whose members bring it back to the starting line. The pair of teams finishing first are the winners.



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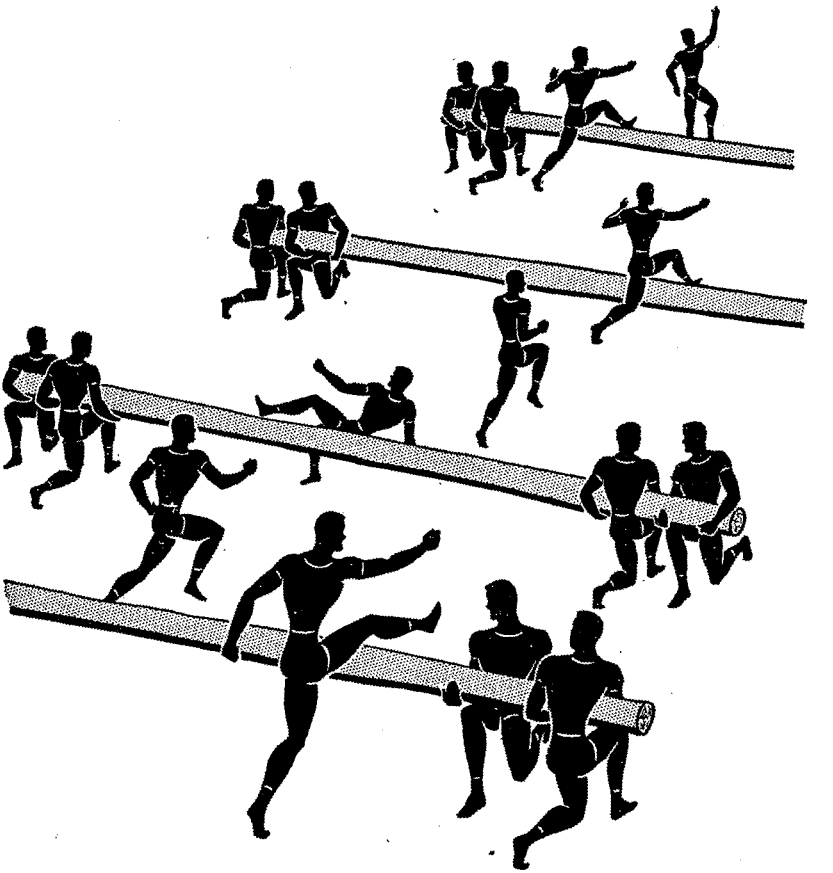
(5) RAT RACE. The logs are spaced about 10 feet apart. The men number off on each log. The odd-numbered men hold the logs in the prescribed positions, while the even numbered men negotiate the logs. Then the even numbered men hold the logs for the odd-numbered men. They change positions at double time. The men holding the logs, in each case, are grouped at the two ends of the log, not distributed over its length. The logs are held in four different positions.

(a) The odd-numbered men hold the log knee high by resting it on the forward thigh while kneeling on one knee. The two men on each end of the log face in opposite directions. The other men run and jump over all of the logs. This can be varied by jumping over the first log and crawling under the second, and so on.



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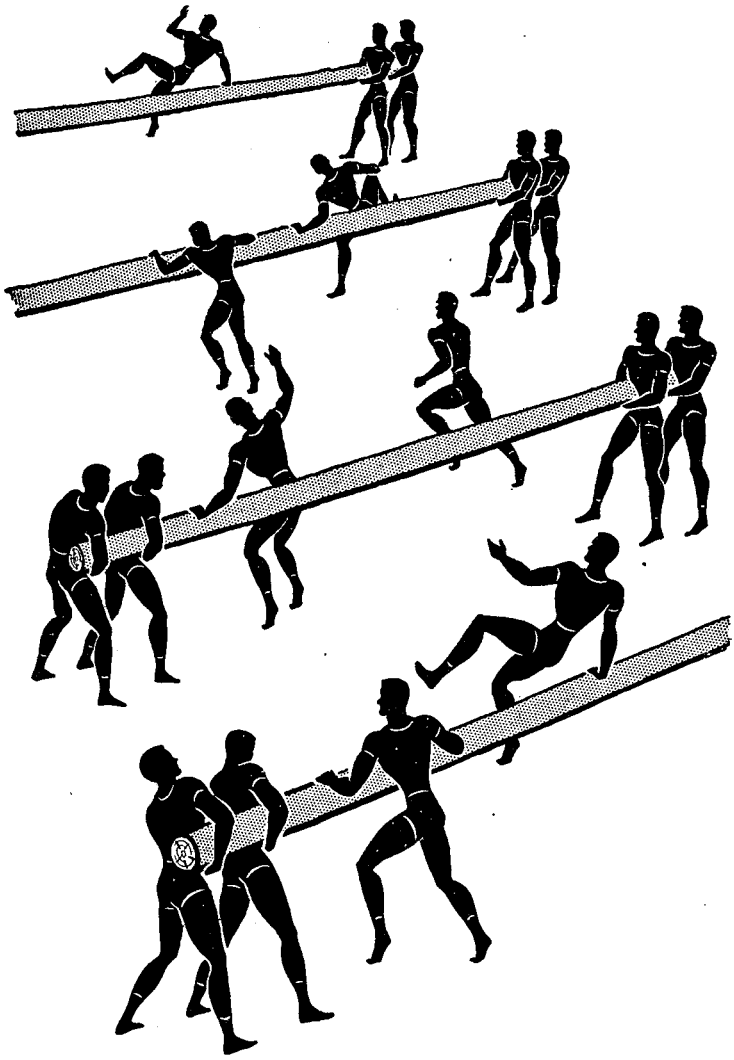

(b) The odd-numbered men hold the log waist high under one arm. The other men run and vault over each log.

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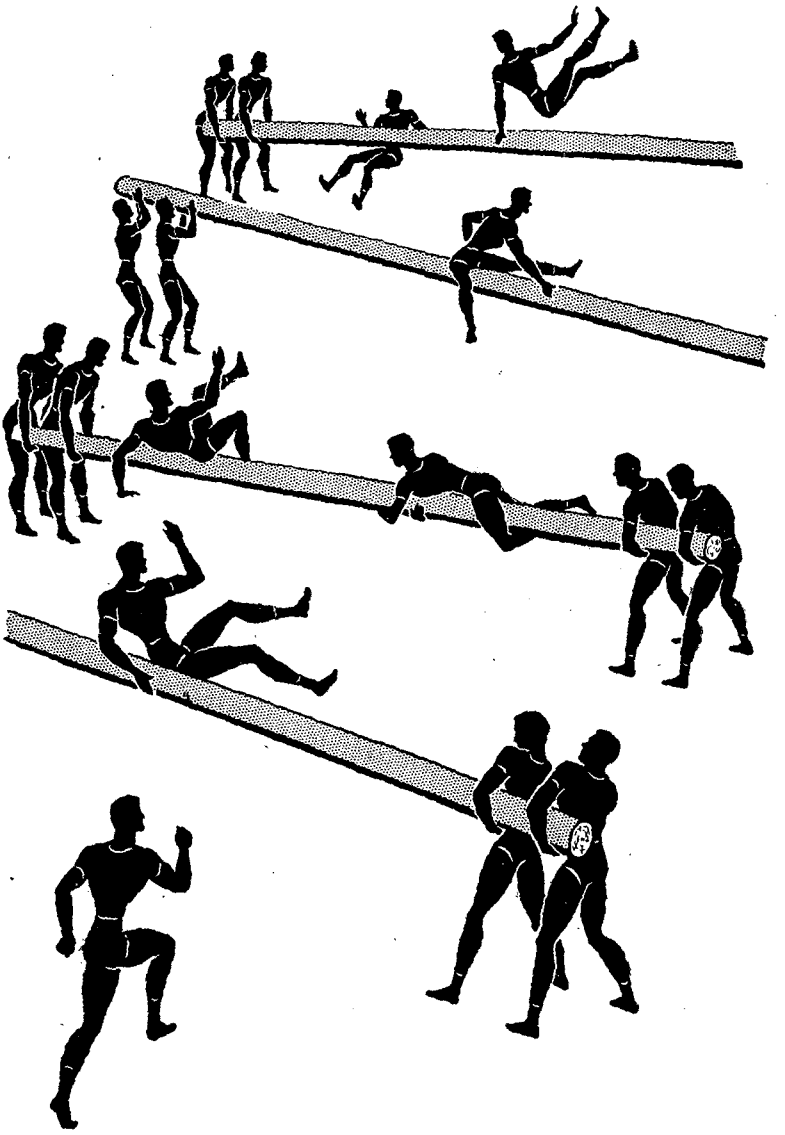
(c) The odd-numbered men hold the log waist high under one arm. The other men run and vault over each log. The log holders make the race more difficult by moving the log up and down rapidly.



(d) The logs are held on the shoulders of the odd-numbered men. The logs are spaced only about 3 to 4 feet apart. The other men crawl over all of

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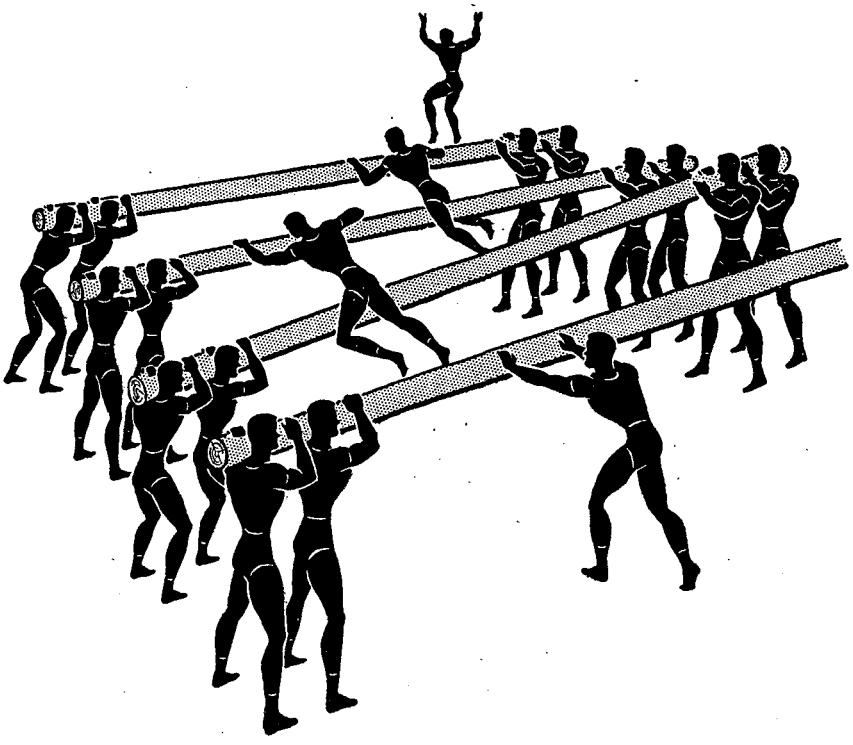
the logs on their bellies without descending between the logs. The log holders can make the race more difficult, if logs are about 3 feet apart, by moving them up and down and by bending and straightening their knees slightly. This movement should not be over a range of more than six inches.



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CHAPTER 7

THE STRENGTH COURSE

59. GENERAL. The strength course is an effective method of organizing a variety of conditioning exercises. Such a course consists of a number of events or stations, the facilities for which are duplicated so that a number of men may participate in each event simultaneously. The men rotate from event to event upon a signal.

60. USE OF STRENGTH COURSE. a. The strength course is an excellent substitute for conditioning exercises because it develops many of the same aspects of physical fitness. The use of this activity from time to time in place of conditioning exercises is recommended to bring variety into the program. **b.** *(1)* The strength course may also be used in combination with other activities such as log exercises (Chapter 6), combatives (Chapter 13) and the "confidence course" (par. 80). This arrangement is an effective conditioning program which the men enjoy because of the variation and competition afforded. However, it should not be made the sole physical training program for an organization beyond the first few months.

(2) The men rotate over these activities spending one period on each. Four platoons may be scheduled as follows:

	1st PLATOON	2nd PLATOON	3rd PLATOON	4th PLATOON
Mon.	Strength Course	Log Exercises	Confidence Course	Combatives
Tues.	Log Exercises	Confidence Course	Combatives	Strength Course
Wed.	Confidence Course	Combatives	Strength Course	Log Exercises
Thurs.	Combatives	Strength Course	Log Exercises	Confidence Course

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The cycle is repeated every four days. The procedure is for the men to double time to the proper area and spend three minutes warming up. They then participate in the activities scheduled for the day for 28 minutes after which they assemble for a run, usually for a distance of a mile. The run is usually double time in formation though it is sometimes changed to some other form of running such as obstacle course or sprint running, grass drills and the like. The run, which is done every day, completes the physical training period.

(3) Care should be taken to assure that progression in conditioning is achieved by progressively increasing the number of repetitions performed in the log exercises and various activities of the strength course, by increasing the severity of the combative activities, by encouraging the men to make faster progress through the confidence course and by increasing the distance and pace of the run. Otherwise the men soon strike a level at which they can work comfortably and do not improve markedly in condition.

61. ADMINISTRATION OF STRENGTH COURSE. a. The number and type of events in the strength course may vary. In the course described in paragraph 62, there are seven stations for each man to cover in succession. Each man rotates to each station twice, making a total of 14 stations. He spends two minutes at each station performing the prescribed exercises. At the proper signal the men at station 7 move to station 1; those at station 1 move to station 2; those at station 2 to station 3, and so on. Approximately 28 minutes are given to the whole routine. Time will be conserved in moving from event to event if the course is laid out in a circle. If sufficient equipment for nine men is available at each station, the course will accommodate 63 men. The equipment and activities at each station are described in paragraph 62.

b. Several instructors carefully supervise the men to see that they perform the activities properly and that they work hard and continuously. Men work until they achieve the required number of repetitions, or until the command to change stations is given. The severity of the strength course varies with the number of repetitions required for its individual events.

62. EVENTS. a. Posture exercises. At one station in each row emphasis is devoted to developing good posture in all men. A posture chart similar to that in Chapter 16, but enlarged until the figures are about 3 to 4 feet high, is erected in front of them. The men look at the illustration of the best posture, and try to assume that posture for about a minute. They then begin to perform the exercise prescribed for that day for the strengthening of postural muscles (see par. 140). These exercises are continued until the men move up to the next station.

b. Pullups. The apparatus at this station is a horizontal bar which is from 7 feet, 9 inches to 8 feet high. There should be a cleat on the side of one

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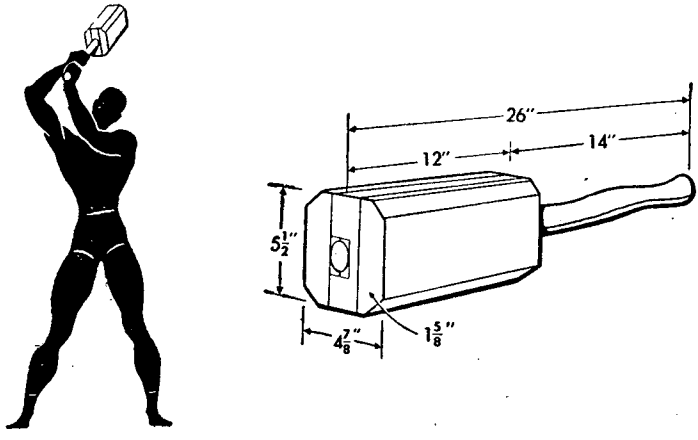
upright to aid short men to get up to the bar. One bar, if at least 6 feet long will serve two men. The first thing a man tries when he reaches this station is to do as many pullups as possible. He should increase this number one each successive week. After finishing the pullups, he rests, not over 20 seconds. Then he hangs on the bar and tries to raise his legs until his toes touch the bar between his hands. If he is unable to get that high, he raises his legs as high as possible. He should do this at least 5 repetitions to begin with. The number of repetitions should be increased two each week.

c. War club. This apparatus is a club with a handle. It should weigh about 20 pounds. It may be made from a fruit can filled with concrete and a handle of any convenient wood. Or it can be fashioned entirely from wood. This club is swung violently from right to left and left to right; from over one shoulder to down by the ground on the other side, in a chopping motion; or swung around the head, one hand at a time. Other movements, devised by the men or by the instructor may be substituted. The club should be swung continuously from the time this station is reached until the man progresses to the next station.



d. Situps. This event can be accomplished in one of three ways:

(1) Without equipment. If no equipment is available at first, the man can either lie on the ground (if it is not wet), or on his raincoat. He then does situps as in the Physical Fitness Tests (see par. 145). A device to hold the feet down will be necessary.

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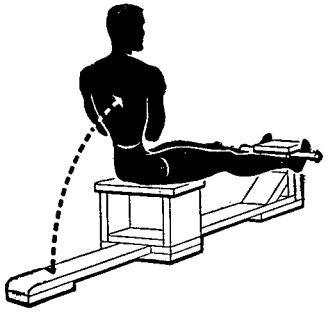
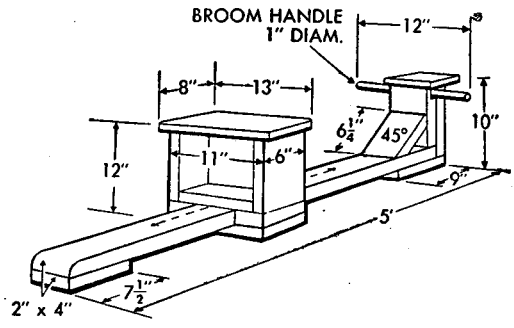
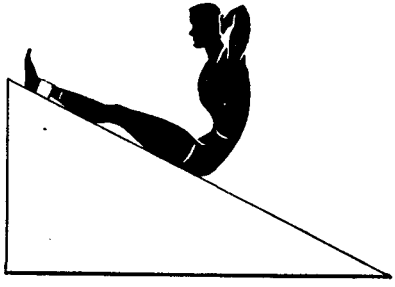
(2) Roman chair. This is a sliding seat on a framework, where the forward end has a bar to hold the feet down. The man sits on the seat, adjusted for his length of legs; lies back; and sits up. He can hold his arms by his sides or behind his head, according to his strength. The man does as many situps as he can continuously, or until the shift to the next station is called.





(3) Slanting plane. This is a board about 18 inches wide. One end is elevated by a framework which causes the board to form a 35° to 40° angle to the ground. There is a heavy strap at the higher end of the board under which to slip the feet. The man lies on his back and slips his feet under the strap. Then he does as many situps as possible. He keeps his hands by his sides or behind his head.



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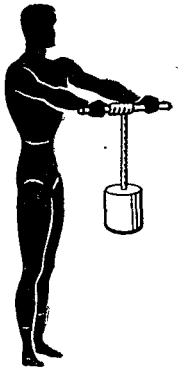
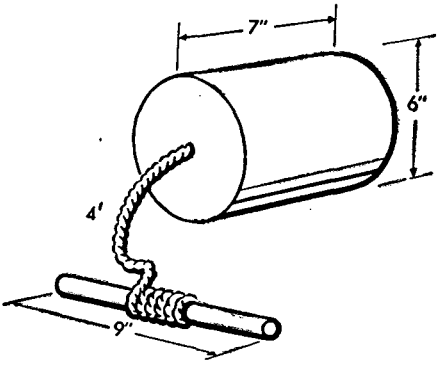
e. Grip and twist. This event provides excellent exercise for the hands, wrists, and fronts of shoulders. The equipment is made of a No. 10 can filled with concrete and attached to a sash cord 4 feet long. The other end of the rope is attached to the middle of a handle. The man holds his arms forward, and winds up the weight on the cord by twisting the handle backward, until it is wound. When the cord is completely wound on the handle, he unwinds the cord slowly, releasing one hand at a time. Then he winds the cord up again, this time twisting forward. He repeats as many times as possible before ordered to proceed to the next station.





f. Squat jumps. A platform of wood is provided so that squat jumps can be done when it is muddy. The exercise is performed as in the Physical Fitness Tests. (See par. 145.) The men should start with 16 jumps and increase the number two each week. Where the men are getting adequate leg exercise elsewhere, rope skipping may be substituted for squat jumps. The rope skipping should be continuous. The men should attempt to master the technique of "crosses" (skipping rope and crossing the arms in front of the chest on every other swing) and "doubles" (passing the rope twice under the feet on each jump). These exercises are much more vigorous than simple rope skipping.

g. Barbell. The barbells are made from 1 to 1½ inch iron pipe, and two No. 10 cans filled with cement. They should weigh about 40 to 60 pounds. The

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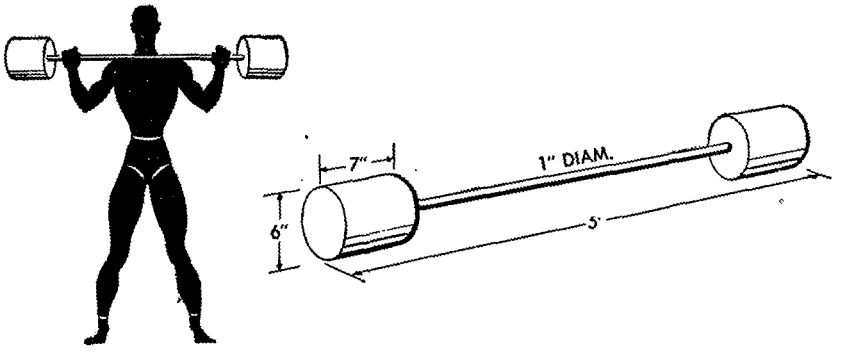
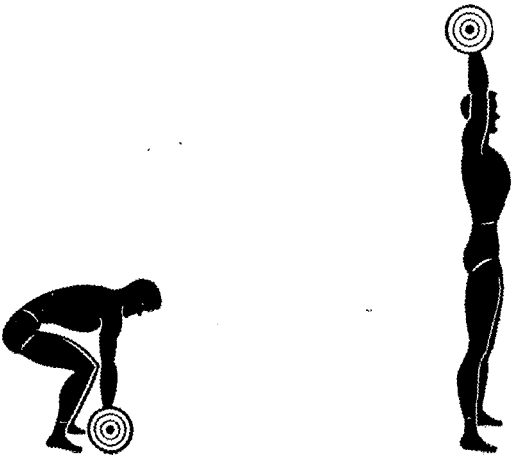
bells are placed in a row. The heavier bells are on the left hand end of the row, and the lighter ones on the right. The larger men should be placed in the rows



with the heavier weights. Any strenuous barbell exercise may be used, but the following are recommended:

EXERCISE 1: THE TWO HAND HIGH PULLUP

Stand close to the bar with feet 12 to 18 inches apart and straight ahead. Bend forward with back straight as possible and grasp the bar, palms down, with arms parallel. Lift the weight slowly until it is fully overhead, inhaling



on the upward movement. Then exhaling, lower the bell slowly to the ground. Repeat as many times as possible up to 20. Keep back straight throughout.

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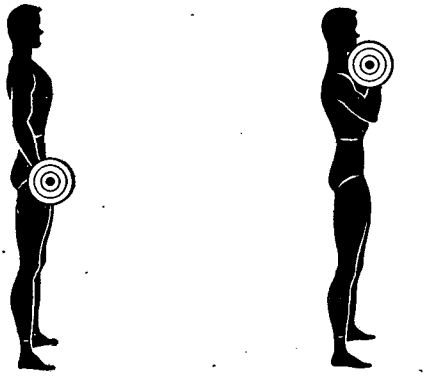
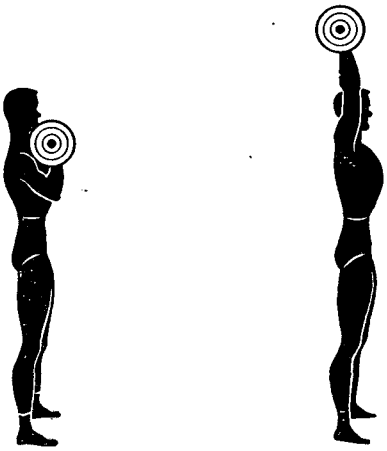
EXERCISE 2: TWO HAND CURL

Standing erect, hold bell in front of the hips, keeping arms parallel and palms forward. The chest should be arched. The elbows remain at the sides. Flex elbows, and lift weight until bar touches the upper chest. Inhale with the upward movement, and exhale with the downward movement. Repeat this as many times as possible up to 20.



EXERCISE 3: THE MILITARY PRESS

Hold bell in front of the upper chest and stand in good posture. Keep palms forward. Inhaling, press the bell upward to the overhead position. Keep trunk erect, and press bell upward and slightly backward over the crown of the head. Then lower the bell slowly to the starting position, exhaling. Repeat as many times as possible up to 20.



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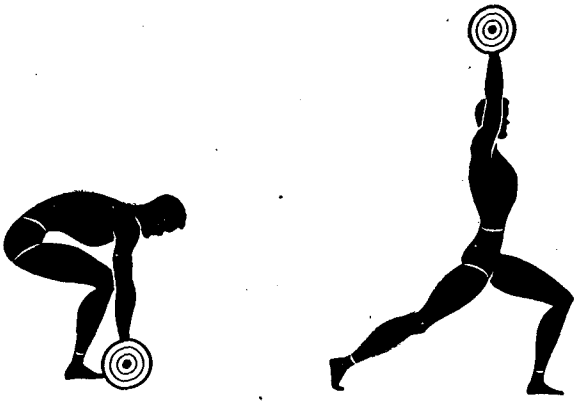
EXERCISE 4: THE SNATCH

Stand close to and grasping the bar with feet 12 to 18 inches apart and straight ahead. Pull barbell upward to the overhead position in one motion. At the same time, split the left foot forward and the right foot backward to a lunge position. The movement is almost like a dropping under the bell. Inhale as the bell goes up. Then recover the rear foot forward to the front foot, and return the bell to the ground in two movements: first to the top of the chest, and then to the ground. Alternate the feet. Repeat as many times as possible up to 20.



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CHAPTER 8

GUERRILLA EXERCISES

63. GENERAL. a. Guerrilla exercises not only contribute materially to conditioning and developing the body, but they also give practice in many activities used in trench and guerrilla warfare, and in scouting. They are a valuable supplement to conditioning exercises and introduce variety into the program.

b. Six or eight exercises from the large number available should be sufficient for the usual daily program. More or less may be used as the situation requires, but too many should not be employed at one time because they are exceedingly strenuous. The length of time or the distance for each exercise depends upon the condition of the men and the difficulty of the exercise. Normally each guerrilla exercise is done for a period of 20 to 30 seconds. Such activities as the broad jump and hops are done a definite number of times. For variation, many of the guerrillas can be done to the right, left, rear, or at double time. Most of these exercises may be employed as events in relay races.

64. FORMATIONS. a. Guerrilla exercises are best conducted in circle formation. The formation should be larger than that used for conditioning exercises. An interval of about 8 feet should separate the men. As the men travel about the circle the instructor must constantly remind them to maintain the proper interval. From 10 to 30 men are placed in one circle; from 30 to 60 in a double circle. Additional concentric circles are added as needed. For such guerrilla exercises as the broad jump and frog jump, the men face away from the center of the circle and perform the activity four or five repetitions. They then execute an about face and repeat, this time coming in toward the center of the circle. They should end up at approximately the same position from which they started.

b. Guerrilla exercises may be conducted in several ways from the square or rectangular formation. If adequate space is available, the exercises can be executed by the men moving straight ahead. If the space is restricted, the men may shuttle back and forth. For example, they may perform two guerrilla

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exercises and then be halted and faced in the opposite direction. This is repeated until the desired number of exercises has been done.

c. An additional method of performing guerrilla exercises involves the use of a movement similar to the countermarch of a band. The exercises are done in an elongated circle. To provide sufficient space between the files for the men to return, the even-numbered men must be recovered to their original positions (before they are commanded to uncover). The space between the men must also be increased. This can be done by extending the men twice. (See par. 26.)

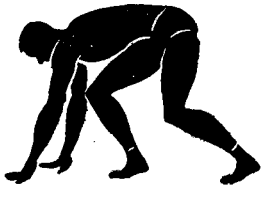
65. COMMANDS. The commands for these exercises differ from those used for conditioning exercises. When the men are in a circle formation the instructor calls them to attention and faces them to the left or right. He commands: 1. Forward, 2. MARCH, and then: 1. Route Step, 2. MARCH. As they march at route step about the circle, the instructor indicates the name of the exercise and follows it with the command of execution. Thus: 1. Bear Walk, 2. MARCH. After the group has performed this activity for the required distance, the instructor returns them to their original position with the command: 1. Quick Time, 2. MARCH. If the instructor desires to intensify the guerrilla exercises he may go immediately to another exercise without returning the men to the erect position. Thus, when the men are executing the Bear Walk he might give the command: 1. Frog Jump, 2. MARCH.

66. TYPES OF GUERRILLA EXERCISES. There are four types of guerrilla exercises: ground (on hands and feet), squat-bend (bending legs or trunk), erect, and double (in pairs). In general, it is advisable to combine exercises from more than one type.

a. Ground Exercises.

EXERCISE 1: ALL-FOURS

Face down on hands and feet, walk forward.



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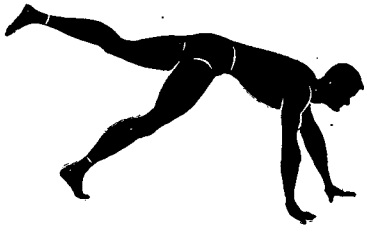
EXERCISE 2: BEAR WALK

Face down on hands and feet. Travel forward by moving the right arm and leg simultaneously and then the left arm and left leg simultaneously. Keep knees straight.

EXERCISE 3: LAME DOG

From the front leaning rest position, and with the left foot elevated, travel forward on both hands and the right foot. After walking the required distance, change the position of the feet.



EXERCISE 4: FACE DOWN CRAWLS*

Face down. Keep head, body, legs and arms close to the ground. Inside of feet should be flat on ground.

Using hands and feet.

*In crawling face down, where the legs are used, push with the inside of the feet, not with the knees. Progress resembles the crawling described in FM 21–75.

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Using hands only.

Using feet only.

Using neither hands nor feet by wriggling the body.

EXERCISE 5: FACE UP CRAWLS

Using hands and feet.

Using hands only.

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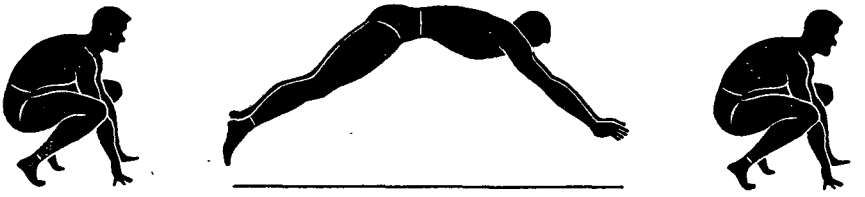
Using feet only.

Using neither hands nor feet.

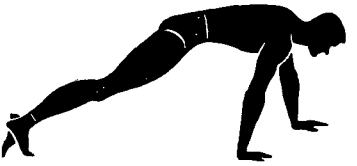
EXERCISE 6: FROG JUMP

Travel forward by leaping from the squatting position, with hands on ground and between knees. Land on hands with arms extended and bring up legs to the squatting position.



EXERCISE 7: POLLYWOG CRAWL

Keeping the face downward, and the back and legs straight, walk forward



on hands and feet. Hands advance with short steps, feet advance by hunching the hips and bending the ankles.

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EXERCISE 8: CRAB WALK, FORWARD

In the sitting position, support body on hands and feet and walk in direction of feet.

EXERCISE 9: CRAB WALK, BACKWARD

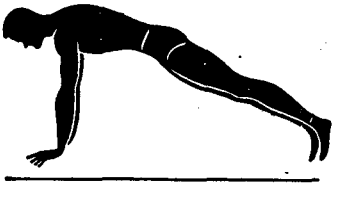
In the sitting position, support body on hands and feet and walk in direction of hands.

EXERCISE 10: INCH WORM

From the front leaning rest position, move the feet up toward the hands in short steps. Every effort should be made to get the heels on the ground as quickly as possible and to keep the palms touching the ground as long as possible. When feet are as close as possible to hands, walk forward on hands to front leaning rest position. Do not bend the knees.

EXERCISE 11: BOUNCING BALL

Face downward. Support body on hands (shoulder width apart) and feet. Keep feet apart, back and legs in line, and knees straight. Travel forward by means of a series of short simultaneous upward springs of hands and feet. Bounce hips up and down.



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b. Squat-bend Exercises.

EXERCISE 1: DUCK WADDLE

Assume full knee bend position with hands on hips. Then walk forward.

EXERCISE 2: CHICKEN WALK

Assume full knee bend position. Grasp the ankles (left hand on left ankle, right hand on right ankle), and walk forward.

EXERCISE 3: FULL-SQUAT JUMPS

Assume full knee bend position, with hands on hips. Then travel forward by short bouncing jumps.

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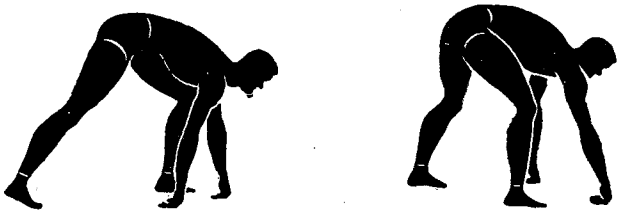
EXERCISE 4: INDIAN WALK

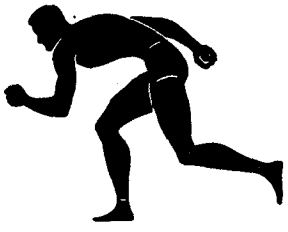


With knees bent slightly and trunk forward, let arms hang down until backs of hands touch the ground. Retaining this position walk forward.

EXERCISE 5: TOE-GRASP WALK

Bend knees slightly; bend trunk forward; grasp toes with hands (left hand on left toe, right hand on right toe). Retaining this position, walk forward.

EXERCISE 6: CROUCH RUN



Lean forward at waist until trunk is parallel with the ground. Retaining this position, run forward at a jogging pace.

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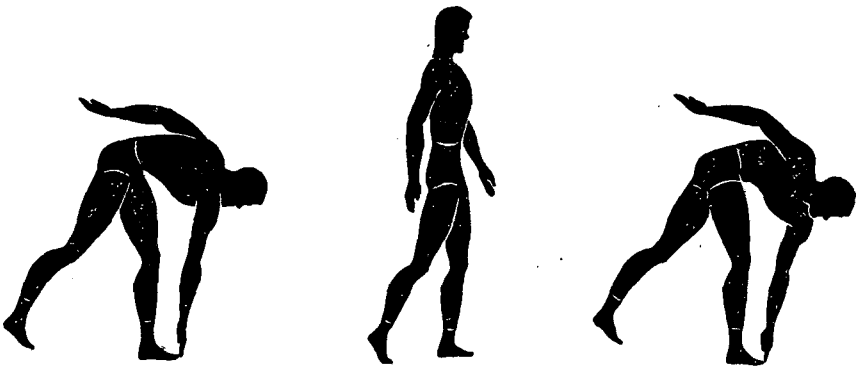
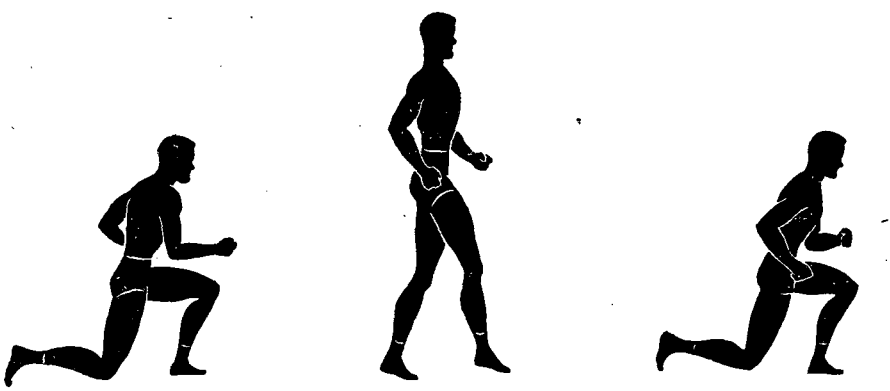
EXERCISE 7: TOE-TOUCH WALK

Walk forward, bending trunk forward and touching one hand to toe of opposite foot on each step. The trunk should be raised to the vertical position



between steps. The toe should be touched as close to the ground as possible. Keep knees straight.

EXERCISE 8: KNEE-TOUCH WALK



Walk forward, bending knees and touching knee of rear leg to the ground on each step. Knees are bent and straightened on each step.

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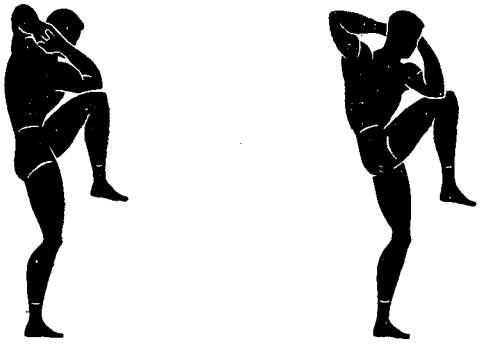
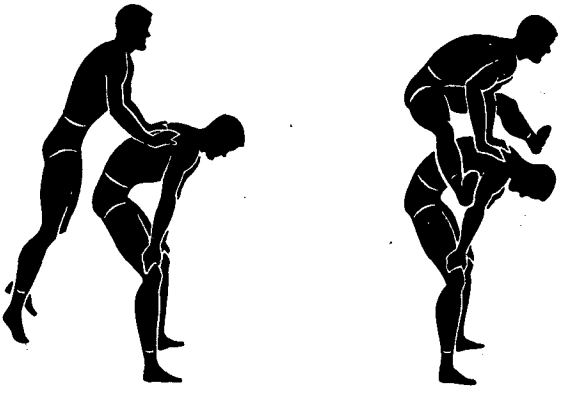
• EXERCISE 9: STEAM ENGINE

With fingers laced behind neck, walk forward in the following manner. As left leg is brought forward, raise knee, bend trunk forward and touch the outside of the right elbow to the outside of the knee. Then step forward on to left foot and raise trunk. Repeat with right leg and left elbow. Continue changing in this fashion.



EXERCISE 10: LEAP FROG

All men place hands on knees and bend head forward. One designated man leap frogs over the men in front of him and continues around the entire circle until he has leaped over each man. Then he returns to his original station where he immediately assumes the crouched position to enable the others to leap frog over him. As soon as he vaults over the first man that man gets up and leap frogs about the circle after him. The third man starts as soon as the second man has vaulted over him. This continues until all have vaulted over all the other men in the circle.



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c. Erect Exercises.

EXERCISE 1: WALK ON TOES

Walk forward on toes.

EXERCISE 2: GIANT-STEP WALK

Walk forward, making every step as long as possible.

EXERCISE 3: FAST WALK

Walk forward at a fast pace, swinging arms vigorously (avoid running).

EXERCISE 4: KNEE-RAISE WALK

Walk forward, raising bent knee of advancing leg as high as possible on each step. Make every step as long as possible by extending leg forward.

EXERCISE 5: GOOSE STEP

Walk forward, swinging advancing foot hip high and then down to ground vigorously. Keep knee of advancing leg stiff. Steps should be of normal length. Swing arms.

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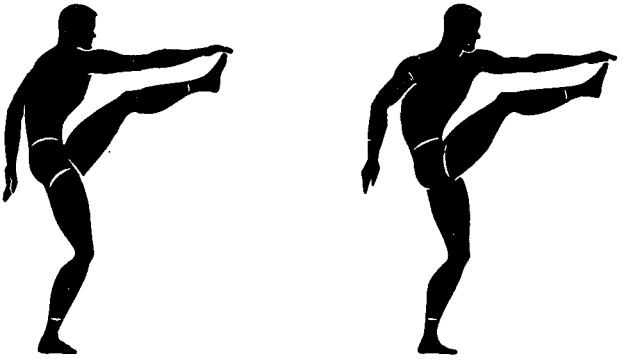
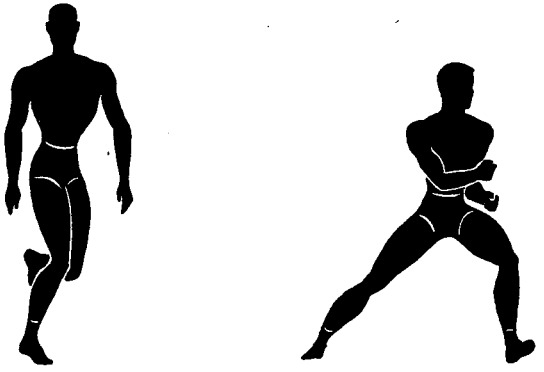
EXERCISE 6: HAND-KICK WALK

Walk forward, kicking foot upward on every step, at the same time lean forward and touch toe with hand of opposite arm. Left hand touches right foot, and right hand touches left foot.



EXERCISE 7: STRADDLE RUN



Run forward, leaping to the right as right foot advances, and to the left as left foot advances.

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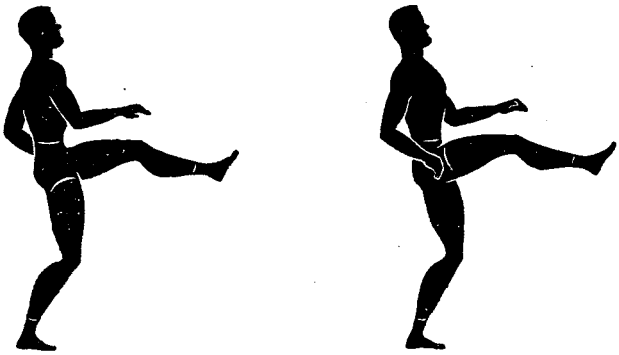
EXERCISE 8: KICK RUN

Run forward, kicking foot of advancing leg upward on every step.



EXERCISE 9: KNEE-RAISE RUN

Run forward, raising knee of advancing leg as high as possible on every step.

EXERCISE 10: HOP

Travel forward by hopping on left foot. Take long hops. Change to right foot and repeat. Jump with both feet together.

EXERCISE 11: HOBBLE HOPPING ON LEFT FOOT

Holding right foot in left hand behind buttocks, travel forward by hopping on left foot.

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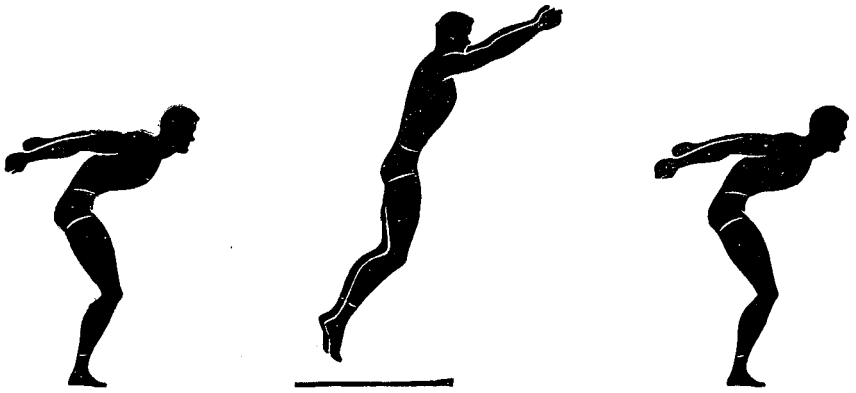
EXERCISE 12: BROAD JUMPING

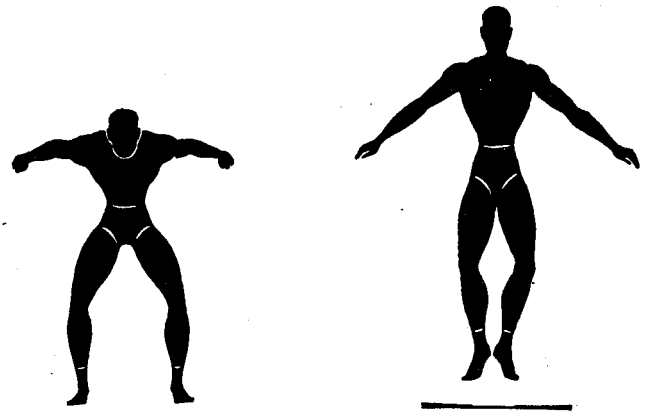
Travel forward by means of a series of broad jumps off both feet.



EXERCISE 13: STIFF-KNEE JUMPING

Holding knees stiff, travel forward by means of continuous short jumps (toe springs).

EXERCISE 14: HEEL-CLICK JUMPING



Travel forward by means of continuous high jumps, clicking heels together on every jump.

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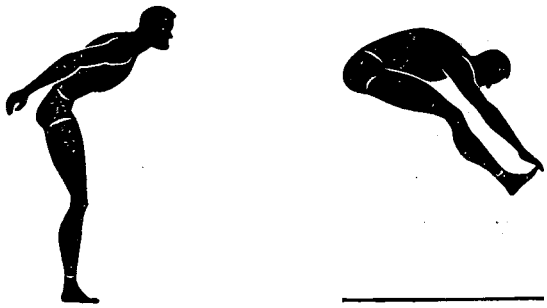
EXERCISE 15: HOP STEP

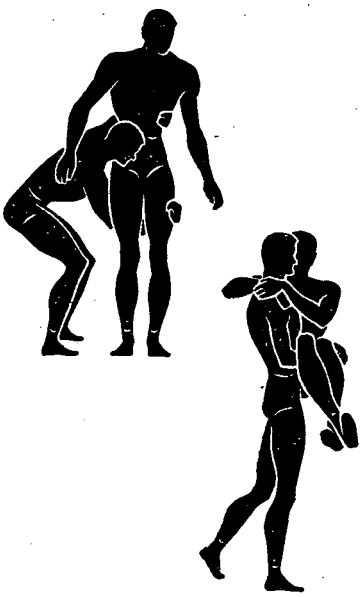
Travel forward by means of a series of hops and steps. Step on left foot, hop on left foot, step on right foot, hop on right foot, etc.

EXERCISE 16: PIKE JUMPING

Jump forward and upward from both feet keeping knees straight. Swing legs forward and touch toes with hands at the top of each jump.



d. Double Exercises. *(1)* Arrange men according to their height and weight, and have the group count off by twos. The "ones" will be designated as *A* and "twos" as *B*. *A's* carry *B's* to start. At the command "CHANGE", they reverse procedure.



EXERCISE 1: ARM CARRY

A stands facing *B's* side. *A* bends his knees and leans forward, placing one arm behind *B's* back and one arm under *B's* knees. *A* straightens up, lifting *B* from the ground. *B* places near arm around *A's* shoulder and clasps his other hand. Retaining this position, *A* runs forward 30 to 60 paces. Repeat with *A* and *B* alternating positions.

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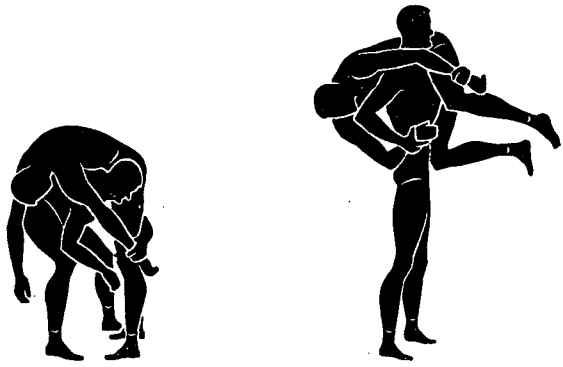
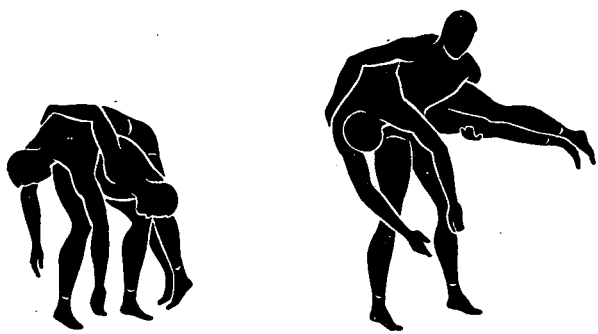
EXERCISE 2: FIREMEN'S CARRY

A stands sideways in front of *B*. *A* bends his knees and leans forward, placing one arm through *B's* crotch. *B* leans forward until he lies across *A's* shoulders. *A* straightens up, lifting *B* off the ground. *A*, using the hand of the arm through *B's* crotch, grasps the wrist of *B's* arm which is hanging over his shoulder. Retaining this position, *A* runs forward 30 to 60 paces. Repeat with *A* and *B* alternating positions.



EXERCISE 3: CROSS CARRY

A stands sideways in front of *B* and leans forward. *B* bends forward until he is lying across the middle of *A's* back. *A* places one arm around *B's* knees



and one arm around *B's* shoulders. *A* straightens up, lifting *B* from the ground. Retaining this position, *A* runs forward 30 to 60 paces. Repeat with *A* and *B* alternating positions.

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EXERCISE 4: SINGLE SHOULDER CARRY

A stands in front of and facing *B*. *A* assumes a semi-squatting position. *B* leans forward until he lies across *A's* right shoulder. *A* clasps his arms around *B's* legs and straightens up, lifting *B* from the ground. Retaining this position, *A* runs forward 30 to 60 paces. Repeat with *A* and *B* alternating positions.

EXERCISE 5: HIP CARRY

A stands in front of *B*. *B* mounts *A's* hips, and clasps his arms in front of *A's* chest. *A* grasps *B's* thighs. Retaining this position, *A* runs forward 30 to 60 paces. Repeat with *A* and *B* alternating positions.

EXERCISE 6: SHOULDER CARRY

A stands behind *B* and leans forward, placing his head between *B's* legs. *A* straightens up, raising *B* to a sitting position astride his neck and shoulders.

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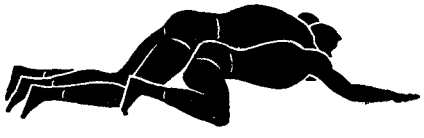
B hooks his feet around *A's* back. *A* grasps *B's* legs. Retaining this position, *A* runs forward 30 to 60 paces. Repeat with *A* and *B* alternating positions.

EXERCISE 7: WAIST CARRY

A stands behind *B*, bends his knees slightly and places his arms around *B's* waist. *A* straightens his knees, lifting *B* from the ground. *B* raises his feet by bending his knees. Retaining this position, *A* runs forward 30 to 60 paces. Repeat with *A* and *B* alternating positions.

EXERCISE 8: PRONE CARRY

A and *B* lie side by side on their backs. *A* grasps the far forearm of *B* and then rolls to the opposite side pulling *B* on his back. Holding *B's* arm, *A* crawls forward with *B* on his back. Repeat with *A* and *B* alternating positions.



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EXERCISE 9: CRAWL CARRY

(1) *A* kneels astride *B* who is lying on his back. *B* clasps his hands about *A's* neck. *A* crawls forward on hands and knees, pulling *B* forward. Repeat with *A* and *B* alternating positions.

(2) The double exercises above may be varied by requiring the man who does the carrying to lift his partner up from a supine or prone position. The partner who is lifted may be instructed to stay limp and pretend to be unconscious. Two methods of lifting may be used:

(a) *B* lies on his back. *A* grasps *B's* wrists and pulls his trunk upright. *A* throws *B* upward and quickly grasps him around the chest under the arms. *A* then lifts *B* up *quickly* so that the upward momentum of *B's* body carries him on upward when *A* releases his arms. *A* then grasps *B* lower down around the chest and maneuvers him into position for carry. Repeat with *A* and *B* alternating positions.

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(b) *B* lies face downward. *A* grasps *B* around chest under his arms and lifts him upward to a position on his knees. *A* then lifts *B* hard so that *B's* upward momentum carries him on upward when *A* releases his arms. *A* then

grasps *B* lower down around the chest and maneuvers him into position for carry. Repeat with *A* and *B* alternating positions.

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CHAPTER 9

MARCHING, RUNNING AND GRASS DRILLS

Section I. MARCHING

67. MARCHING IN THE CONDITIONING PROGRAM. In addition to its military value, marching is widely used as a physical conditioner. Where used as a conditioner, it may take the form of forced marching at an accelerated quick time for shorter periods of time, of longer forced marching, combining quick time and double time, or of long marches at an ordinary pace. Because of the fact that physical conditioning is proportional to the intensity of the exercise and since the dosage or intensity varies approximately with the cube of speed, the faster marches have more conditioning value than the slower and somewhat longer ones. Thus a march of 5 miles in one hour has several times more value in physical conditioning than has a march of 5 miles in 2 hours. The relationship is not too simple, for it is physiologically easier to double time than to quick time at the higher speeds of walking—speeds approaching or exceeding 5 miles an hour. Hence, for *conditioning*, much of the marching should be fast quick time marching or a combination of quick time and double time. These fast, quick time marches should be introduced gradually with due allowance for terrain, weight carried, condition of the troops and the temperature of the day. They should become progressively more severe.

68. MARCHING STANDARDS. Recommended standards for marches are as follows:

(1) March 4 miles in 45 minutes.
(2) March 5 miles in 1 hour.
(3) March 9 miles in 2 hours.
(4) March 16 miles in 4 hours.
(5) March 25 miles in 8 hours.
(6) March and double time for 7 miles without a halt.

In marching the first four distances above, a combination of quick time and double time is less fatiguing than fast quick time marching. For example, 166 thirty-four inch steps per minute are required to march 4 miles in 45

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minutes. A quick time cadence of 166 is far beyond the capabilities of the average unit. The fifth distance can be covered by marching at quick time, if the length of the noon halt is reduced.

The optimum pace and cadence in quick time and double time for a unit must be determined by experiment. The pace and cadence adopted by a unit for quick time and double time will of necessity determine the amount of each required to attain the desired over-all rate.

69. DOUBLE TIMING. Double timing in formation is difficult to execute properly. Practice is necessary to perfect the technique. To minimize fatigue while double timing, troops should keep in step, lean forward with knees bent, and place their feet perfectly flat on the ground. No man should be allowed to run on his toes or to let his heels strike the ground first. The jolt from the foot striking the ground should be minimized. The feet should skin the surface of the ground as energy is lost in picking up the feet unnecessarily high. Double time is *not* a run; it is best described by the term "jog" or "dog trot". A stop watch will help keep check on the minutes of quick time or double time during the march. Where the marching course is over varied terrain, maximum advantage should be taken of all downgrades for double timing. Double timing upgrade results in an excessive number of stragglers.

There are, as yet, no set standards as how best to alternate quick time and double time. A general rule is to begin with enough quick time marching to insure a thorough warming up and to get the feet adjusted to the shoes. Then double time about 100 paces; quick time until the men have made a reasonable recovery from the running; then double time another 100 paces; etc. The officer in command of the unit should permit the men to quick time long enough for recovery.

From week to week, the amount of double time can be increased and the quick time decreased until the men are double timing about 300 yards and quick timing about 300 yards. Some units, such as rangers and parachute troops, train until they can double time for greater distances, especially when marching without equipment, or with light equipment. This type of training should be engaged in at least twice a week.

Section II. RUNNING

70. TYPES OF RUNNING ACTIVITIES. Running is the most effective way of developing the circulo-respiratory endurance and it should be included in the physical training program every day. It may take the form of drill field running, road work, wind sprints, cross country running, or running the obstacle course. Grass drills and some types of games develop the same type of endurance and may be substituted for other forms of running.

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71. GENERAL FORM AND TECHNIQUE. Because many soldiers do not know how to run well, it is advisable to teach them the proper form at the outset. In running, as contrasted with the double time shuffling gait, the body leans slightly forward without bending at the waist. The head is erect, the knees lifted well out in front, and the toes pointed straight ahead. When the foot reaches a position about 18 inches in front of the center of gravity, the foot and leg are brought backward vigorously. The foot contacts the ground almost under the center of gravity, not out in front of the body. The runner alights on the balls of the feet, and not on his heels,—unless he is running slowly and for a long distance (double timing).

When the runner lands on the ball of his foot, his heel immediately sinks to the ground. He then pushes off from the ball of the foot as his foot leaves the ground. The runner swings his arms from the shoulders. His elbows are bent at an angle of 45° to 60° from a straight line. The range of the arm movement is fairly short. It does not pass the median line of the body in the forward swing. However, the hand comes close to the median line just below the level of the chin in fast running. In the backward swing the arm does not go far past the hip. When the foot leaves the ground and starts forward, the heel is brought high beneath the hip, especially in fast running. The path described by the foot is an elongated ellipse. That is, the foot starts from a position underneath the hip, moves out and forward, then down and backward, contacting the ground. The slower the pace, the lower the foot on the forward swing. After the foot leaves the ground the heel immediately starts forward and upward. The knee action and the arm action should be free and smooth at all times. All muscles not used in running should remain relaxed. The illustrations below represent the proper running form.

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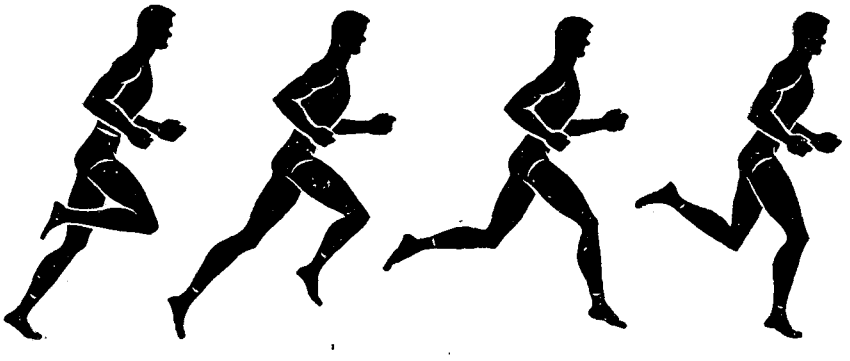
72. ROAD WORK. Road work is a mixture of hiking and running which is used extensively in the physical training program, particularly in the early stages. Usually, the soldier begins with 100 paces at double time, and 200 to 300 paces at quick time. These proportions gradually change until the soldier is alternately running 300 paces, and marching 100 to 200 paces at quick time. The total distance should take from 10 to 30 minutes. The length varies with the stage of training of the soldier, and the speed of running. To make the demand more severe, increase the speed of running beyond that normal for double time.

73. WIND SPRINTS. Wind sprints provide an excellent means of giving a comparatively large number of men a strenuous workout in a few minutes. Parallel lines are drawn from 40 to 60 yards apart. The instructor takes up a position midway between the two lines. All the men are stationed behind one of the lines. The instructor calls out, "All men over 200 pounds take the mark" (any other convenient means of grouping men may be employed). Then, upon command (usually a sharp blast from a whistle), this group sprints at top speed in front of the instructor. He calls out the names of the men who pass by in first, second, and third places. The men then "coast" for an equal distance (slowing up gradually) and take their positions behind the other line. As soon as the first group has passed the instructor he calls for the next group, "men over 190" who race in the same manner. This process is continued until all men have sprinted past the instructor. The process is then repeated immediately with the men sprinting in the opposite direction. A hundred men can be given a strenuous workout in 5 minutes by means of this drill. The dosage can be regulated by increasing or decreasing the distance or the number of sprints, or both.



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74. CROSS COUNTRY RUNNING. Cross country running is usually thought of as distance running over relatively rough terrain, where men run from the beginning to the end of the course. It may, however, include some walking, as in road work. Cross country running should not be confined to level areas, but should include running over hills and through rough country where possible. The group engaged in cross country running may range in size from a single platoon to a company. Leaders should be stationed at the head and the rear of the column, and every effort should be made to keep the men together. After the abilities of the men in cross country running have been determined, it is advisable to divide the unit into three groups. The poorest conditioned group is started first; the best conditioned group, last. The starting time of the groups should be staggered so that all groups come in about the same time.

In preliminary training the running is similar to ordinary road work in that it begins with rather slow jogging, alternating with walking. The speed and distance of the run is gradually increased. As the condition of the men improves, occasional sprints may be introduced. During the preliminary stages of cross country running the distance is short (from ½ to 1 mile). It is gradually increased to 2 or 3 miles. On completing the run, the men should be required to continue walking for 3 or 4 minutes before stopping, to permit a gradual cooling off and return to normal physiological functioning.

Section III. GRASS DRILLS

75. GENERAL. a. Grass drills are vigorous exercises, involving going to the ground and getting up, interspersed with either short sprints, vigorous stationary running, or other exercises. These drills are strenuous and should not be continued for more than 2 or 3 minutes during the early stages of the conditioning program. They may be carried on for about 5 minutes after the men have become well conditioned. After several minutes of marching or other mild exercise they may be repeated.

b. Grass drills should be executed vigorously and quickly. The commands should be given in rapid succession. All of these exercises demand considerable endurance, and the men should be required to keep driving even after they become tired. Grass drills should continue until there is real respiratory distress.

c. The commands used in conducting grass drills are informal and do not include the usual preparatory command. The men execute the command immediately upon hearing it. These are drills of alertness and quick response, as well as of conditioning. Since one purpose of this drill is to develop alertness and quickness in following commands, there should be no set sequence of movement. Rather, the order should be varied so that the men will not be able to anticipate the next movement.

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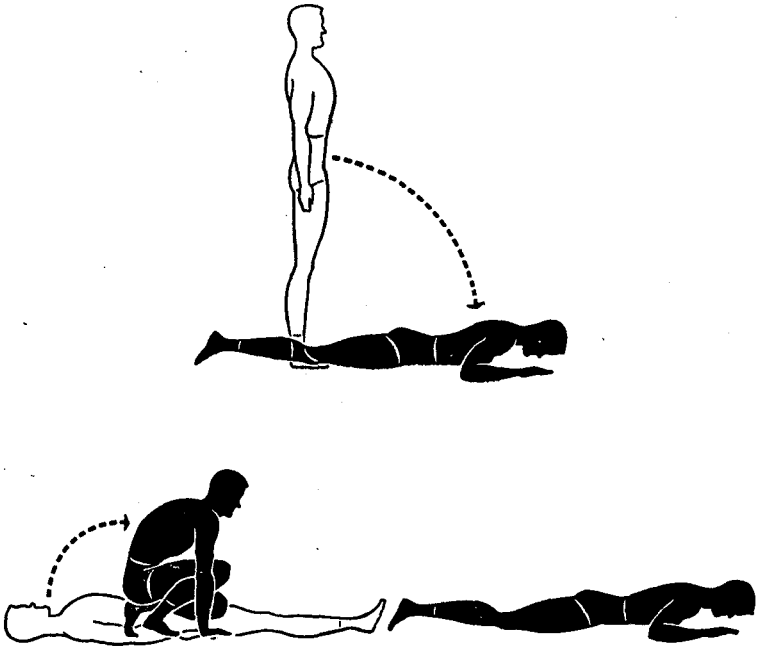
d. The basic exercise in grass drills is running. Most frequently this is stationary running, or running in place. The men sprint vigorously swinging their arms hard as in running, and raising their knees above the hips but without forward progress. If actual sprint running is used, the men sprint 10 to 20 yards according to the time permitted between commands. The most commonly used commands and maneuvers are as follows:

(1) STATIONARY DRILL

(a) Front. From a standing position, the men drop as quickly as possible to the ground in the prone position as for firing. If this command is given while the men are lying on their backs, they come up to the squatting position, thrust their legs backward, and assume the FRONT position as quickly as possible.



(b) Back. From the erect position the men drop instantly to the ground on their backs. If this command is given while the men are in the FRONT position they assume the BACK position as quickly as possible by pushing up with their arms and thrusting their legs forward between the arms.

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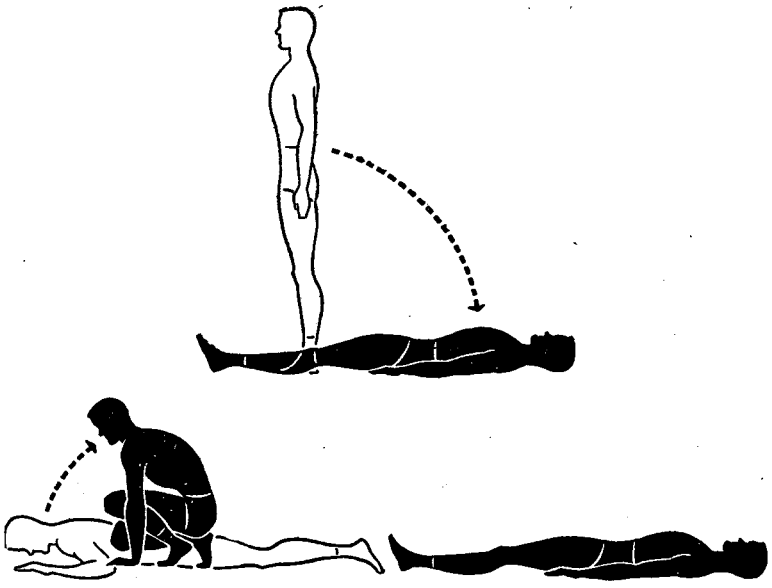

(c) Up. From either the FRONT or BACK position the men spring to their feet as quickly as possible and do a stationary run until the next command is given.

(2) RUNNING DRILL

(a) Go and Stop. This type of drill is best executed with the men at 2 yard intervals in line formation. At the command: GO, the men charge forward as football linemen do in running signals. At the command: STOP, they stop and drop immediately to the linemen's crouch. This GO and STOP sequence

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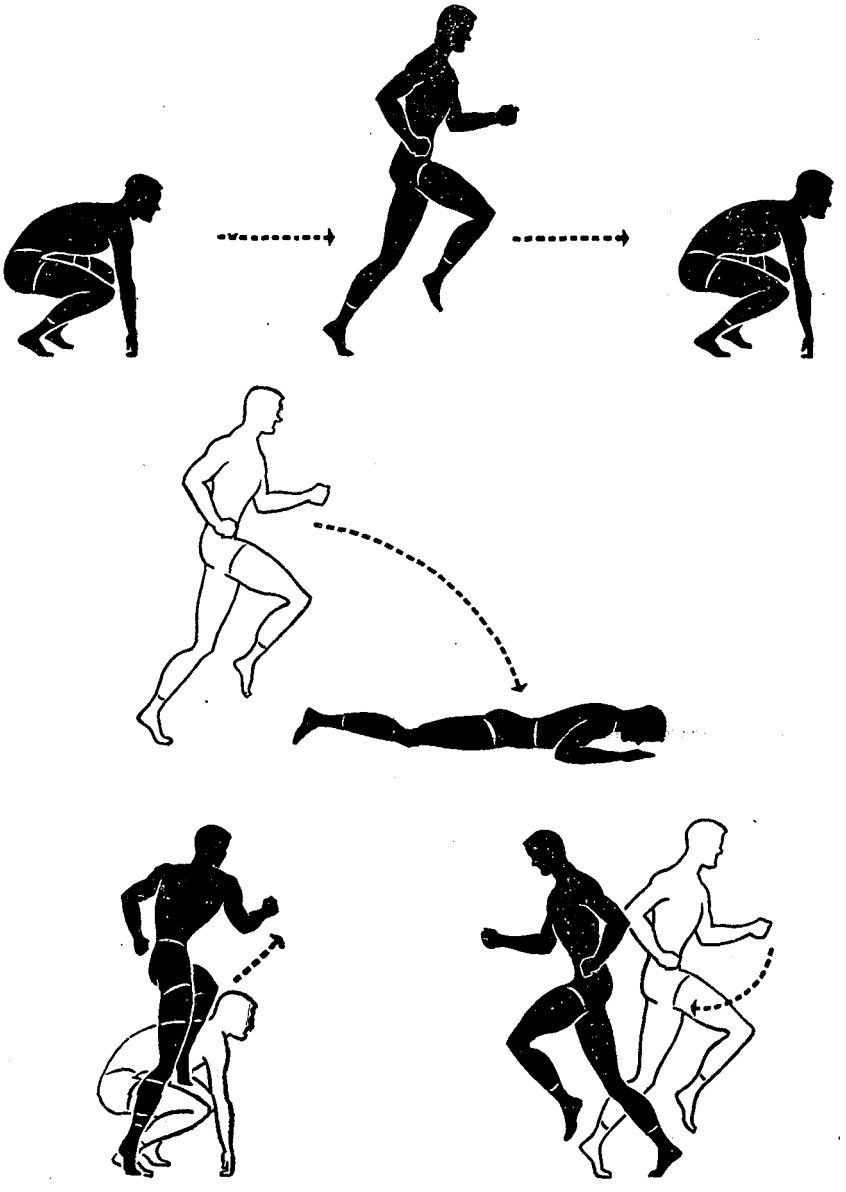
is rapidly repeated. It may be varied by interposing the commands FRONT and BACK (1 *(a)* and *(b)* above). Another variation is to command: RIGHT (or LEFT), at which the men charge at an angle of about 45° to the right (or left). The command: TO THE REAR is used to reverse the direction. A whistle is better than spoken commands for maneuvers of the GO and STOP variety.



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(b) Zig-Zag Run and Drop. This exercise begins with the command: RIGHT (or LEFT). The men charge at an angle of about 45° to the right (or left). They continue running but with each single blast of the whistle they change direction by 45°. Two blasts of the whistle are the command to drop to the ground in the FRONT position ((1) *(a)* above). When the whistle next sounds, the men spring to their feet and continue the maneuver.

(c) Zig-Zag Run and Squat. This exercise is executed in the same manner as *(b)* above, except that on two blasts of the whistle the men come to a full squat with hands on the ground, instead of dropping to the ground.

(d) Zig-Zag. This command calls for a very wide straddle run. The men spring 3 or 4 feet laterally as well as forward with each stride. They spring from the right foot toward the left and from the left foot toward the right. Although this exercise is usually performed while running forward, it can also be done without forward progress.

(e) Cross Step Zig-Zag. On this command the men spring to their feet unless already standing and combine an exaggerated cross-over step with every 3 steps of an ordinary run. The cross-over step is executed by crossing in front of the right foot with the left foot or vice versa. The run is continued in this manner until the double blast of the whistle commands the men to drop to the ground.

(3) COMBINATION EXERCISES. It is often desirable to combine the grass drills (either the stationary or running type) with various conditioning exercises. These supplementary conditioning exercises should usually be done at a faster than ordinary cadence. The exercises most frequently used for this purpose are:

(a) Squat Thrust. (See par. 49.) This exercise may also be executed by thrusting legs diagonally to the rear, alternately to the left and right. When using it in conjunction with Grass Drills, repeat from 15 to 30 times.

(b) Sit Ups. From the BACK position and with arms stretched overhead, sit up, reach forward, and touch toes. Then recover to the supine position. About 20 sit ups is the usual dosage.

(c) Legs Overhead. From the BACK position with hands on the ground beside the hips, raise legs upward, then swing them backward over head until the toes are barely off the ground behind the head. Return legs to the starting position. Execute this movement in relatively slow cadence keeping the knees straight throughout.

(d) V-Up. (See par. 50.) Repeat from 10 to 20 times.

(e) Body Twist. (See par. 49.) Repeat from 12 to 20 times.

(f) Bicycle Exercise. From the BACK position raise the legs and hips. Keep elbows on the ground and support the hips with hands. Execute vigorously movements similar to those employed in pedaling a bicycle. Continue for 30 to 60 seconds.

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CHAPTER 10

OBSTACLE AND CONFIDENCE COURSES

Section I. OBSTACLE COURSE RUNNING

76. GENERAL. a. Obstacle course running serves a dual purpose. It develops physical capacities, and fundamental skills and abilities that are important to soldiers in combat operations. Soldiers must be able to crawl, creep, climb, walk, run, and jump in order to accomplish certain missions. Further, carrying full field equipment, they must be able to do all these things for long periods of time without exhaustion or injury, even after fatigue has set in.

b. Some installations, particularly temporary ones, will not have an obstacle course. In such cases, the value derived from an obstacle course can usually be obtained by combining several other activities. The best substitute is a vigorous grass drill with slightly longer periods of running. (See par. 75.)

77. CONSTRUCTION OF OBSTACLE COURSE. a. Complete standardization of obstacle courses should not be attempted since topographical conditions always vary. Full utilization should be made of streams, hills, trees, rocks, and other natural obstacles. Officers constructing such courses will exercise their ingenuity. Since these courses will eventually be run at high speed, they should not be dangerous.

b. The course should be wide enough to permit six or eight men to run simultaneously. This will provide keener competition. The lanes for the first several obstacles should be wider and the obstacles, themselves, easier than those that follow. This will avoid congestion until the contestants scatter out. The last two or three obstacles should not be too difficult and should not involve high climbing. This will avoid injuries and falls resulting from fatigue.

c. The total distance of the course should range from 300 to 450 yards and include from 15 to 25 obstacles. Normally the obstacles should be 20 to 30 yards apart and should be arranged so that those which exercise the same groups of muscles are separated.

d. The obstacles should be substantially built. Peeled logs, 6 to 8 inches in diameter are ideal for many of the obstacles. Sharp points and corners

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should be eliminated. Landing pits for jumps or vaults should be filled with sand or sawdust to prevent injuries. The course should be constructed and marked so that it is not possible to sidestep or detour obstacles. Sometimes, however, it is desirable to provide alternate obstacles of varying degrees of difficulty. Signs should be placed to indicate the route. If possible, the course should be in the shape of a horseshoe or figure 8 so that the start will be close to the finish.

78. USE OF THE OBSTACLE COURSE. a. Before troops run an obstacle course in its entirety, they should be taken to each obstacle in turn and instructed in the proper technique of negotiating it. In each case this technique should be explained and demonstrated in detail with emphasis on the avoidance of injury. Every individual should be given an opportunity to practice on each obstacle until he becomes reasonably proficient at negotiating it. Before the course is run against time it is advisable for the men to make several practice runs at a slower pace. During such practice or trial runs, the instructor should observe the performances and make appropriate corrections. The men should never be permitted to run the course for time until they have mastered all obstacles thoroughly.

b. The best method of timing runners on an obstacle course is to have the timer stand at the finish and call out the minutes and seconds as each man finishes. If several watches are available each wave of men may be timed separately. If only one watch is available the different waves should be started at regular intervals such as every 30 seconds. If men fail to negotiate an obstacle, a previously determined penalty should be exacted.

79. TYPES OF OBSTACLES. Obstacles may be classified according to types as follows:

a. Hurdles are elementary obstacles. A hurdle consists of a bar or rail 2 to 3½ feet in height. It may be hurdled in stride as in track hurdling; leaped over; or vaulted with the aid of one or both hands. If a man is carrying a rifle, he should extend it upward and forward on taking off and bring it back to the normal position on landing.

b. Fences are similar to hurdles but somewhat higher and more sturdily constructed. They are negotiated by vaulting from both hands or, when carrying a rifle, swinging over with the body pivoting on either hand as it rests on the rail. Men who are unable to get over the fence by either of these methods should be taught to straddle the obstacle and swing over with the aid of the hands, pivoting upon the buttocks as they are momentarily in contact with the rail.

c. Balance beams are constructed of logs or planks 4 to 12 inches wide, arranged in a zig-zag manner to test balance. Each section is from 8 to 12 feet

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long. These obstacles should be approximately level and the tops reasonably smooth. Care must be exercised to avoid injury when the logs or planks are wet and slippery.

d. Walls should be 7 or 8 feet high and solidly built. In surmounting a wall the body should be kept as close to the top of the wall as possible since in combat operations it is important to offer as small a target as possible to the enemy. If a man is negotiating a wall while carrying a rifle, he should sling it over his back to free both hands. There are four methods commonly used for surmounting a wall of moderate height, but only one for dropping from it:

(1) Running Jump and Vault. Approach the wall at a run, jump forward and upward at the wall and place one foot against it as high up as possible. Use the foot in contact with the wall to help push the body *upward* while grasping the top of the wall with the hands. Pull the body up with the arms, assisted by pressure of the foot against the wall, until the weight is over the wall.

(2) Hook and Swing. Approach the wall at a slow run and jump forward and upward at it. Hook one elbow over the wall, locking the arm into place by pulling up until the top of the wall is underneath the armpit. Then depress the elbow on the further side of the wall. Draw leg which is closer to the wall up as far toward the abdomen as possible. Then swing leg over the top of the wall. The body is then carried over with a rolling motion. A variation of this leg action can be used by men who are unable to draw up the leg as described. While hanging with both legs fully extended, start a swinging motion with the legs together. When sufficient momentum is gained, swing the outside leg over the top of the wall with a vigorous kick, then follow with the body.

(3) Creeping. Approach the wall either at a walk or a slow run. Jump upward and grasp the top of the wall. Make contact with both knees and start a creeping motion upward. As the knees reach their limit of upward motion, place both feet against the wall and continue with a walking, creeping method until one leg can be thrown over the top of the wall. Make sure a creeping walk is used.

(4) Chinning. Approach the wall at either a walk or a slow run. Jump upward and grasp the top of the wall, chin upward, until it is possible to change into a push-up. Place the chest on the wall and then kick vigorously upward and over, with both legs. A creeping motion with the toes against the wall, at all times, will help the upward progress of the chinning and pushing up.

(5) Dropping. All drops from the wall are executed in the same manner, regardless of the method employed to gain the top. One hand is placed against the further side of the wall while the other hand grasps the top. From this position the body is rolled over the wall and "vaulted" away from it with

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the legs swinging clear. As the body passes over the wall and drops it should at all times face the wall. This will keep the rifle and other equipment clear. Break the fall by retaining a grasp on the top of the wall as long as possible. There should be a sand pit or sawdust pit at the foot of the wall on the landing side to minimize injury.

e. Ditches or trenches may be wide or narrow, deep or shallow, dry or filled with water. However, wide water jumps in which more than a few men are likely to fall into the water should be avoided since banks wet from frequent splashings make footing hazardous and increase the chances of injury. Participants should be taught the correct technique for jumping, including how properly to judge the take-off, so that the maximum amount of safety, as well as spring, are acquired. In landing, both feet should touch the ground simultaneously, 12 to 18 inches apart, knees should be flexed, and the body inclined slightly forward.

f. Tunnels or low obstacles call for locomotion on all fours in either of two ways:

(1) Creeping. Moving forward on the elbows and knees, presenting a low silhouette at all times.

(2) Crawling. Moving forward with the chest and stomach in contact with the ground at all times.

g. Ladder-type barriers are made of wood and/or rope and may be either vertical or horizontal. The most commonly used obstacles of this type are:

(1) Cargo Net. In ascending the cargo net, grasp the *vertical* ropes with hands at shoulder width. Hold body close to the net and keep the eyes on the top of the obstacle. Ascend as rapidly as possible by means of short steps and short reaches with the arms. Upon reaching the top roll across it presenting a low silhouette. In descending, the same technique is used as in climbing. The descent is continued until both feet are on the ground. Participants should not be permitted to push loose from the net and jump.

(2) Horizontal Ladder or Rope. This obstacle may be negotiated in either of two ways:

(a) Grasp the rope or ladder with one hand on either side. Flex elbows and proceed hand-over-hand. Allow the body to swing freely and flex knees slightly. A variation of this hand-over-hand method is to grasp the ladder or rope with both hands on the same side. Forward movement is then attained by sliding the leading hand forward and bringing the trailing hand up to it.

(b) Facing away from the direction of travel, grasp the horizontal ladder or rope from each side. Hook the legs over the obstacle, one from either side, to help support the weight of the body. With the head leading, pull the body forward hand-over-hand.

h. Climbing ropes may be either plain or knotted. They should be 1½

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inches in diameter. Methods of climbing and descending ropes will be found in FM 21–22.

i. Mazes may be either vertical or horizontal and should be executed with speed and coordination.

(1) Horizontal mazes usually consist of posts set in the ground at irregular intervals. The intervals between posts should be rather narrow so that the participants must pick their way carefully through and around them.

(2) Vertical mazes are structures through which men climb. They resemble jungle gyms or trainasia.

j. Wire is usually of greater value as an adjunct to other obstacles than when used alone.

(1) Smooth wire may be used to dress up certain types of barriers. Smooth wire concertinas are sometimes used as obstacles. More often, they are used in combination with some other fixed obstacle.

(2) Barbed wire may be utilized as an obstacle on its own or in connection with trenches and emplacements in the form of a double-apron or single-apron fence. A wide strip of chicken netting may be laid over the barbed-wire obstacle and the men required to cross over it at a run.

Section II. THE CONFIDENCE COURSE

80. THE CONFIDENCE COURSE. a. This modification of the obstacle course idea is designed to cultivate confidence and a spirit of daring rather than to exercise and condition the men. The negotiation of a confidence course, however, is sufficiently strenuous to be an excellent physical conditioner. The obstacles are designed to be negotiated at a relatively slow pace. The men should NEVER attempt to take them at high speed, and should not race over them. The obstacles will vary from fairly easy to extremely difficult ones. Some should be of considerable height, in order to accustom the men to climbing such heights without fear. Considerable emphasis should be placed on obstacles designed to train and test balance.

b. The following general rules govern the use of the confidence course:

(1) No compulsion is to be used. The men are encouraged to try the various obstacles, but are not compelled. If any man wishes to skip any obstacle, he is permitted to do so.

(2) The manner and speed of negotiating any obstacle is left to the discretion of the individual. However, the instructor will assist any soldier with advice when it is sought.

(3) The example of instructors and especially selected demonstrators will serve to inspire the men to greater effort.

(4) For men who lack sufficient strength, courage, or ability, a few simple installations will be provided. These are such pieces of apparatus as bars for

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pullups, ropes to climb, parallel bars, bars of various heights to vault, bar bells, medicine balls, and platforms or places for practicing situps. If these men are encouraged to volunteer to try the easier of the confidence obstacles, they will gradually take their places with the others. This group should be under an instructor, and should be worked hard. It may be termed the "Fifth Squad."

81. EQUIPMENT AND OPERATION. a. The confidence course should be made up of about 24 obstacles. These should be numbered and marked as follows:

1 to 6, white numbers on red background.
7 to 12, black numbers on a white background.
13 to 18, white numbers on a blue background.
19 to 24, white numbers on a black background.

b. The course as outlined, accommodates a company of four platoons.

c. Each platoon starts initially at a different color. The men are separated into groups of 8 to 12 at each obstacle. At the starting signal from the company commander, they proceed through the course: 5 to 6, 6 to 7, 24 to 1, etc. Any man may skip any obstacle which he fears to attempt. The men proceed from obstacle to obstacle until time is called. Then they assemble as ordered.

d. A suggested set of obstacles suitable for such a confidence course (but not usually adaptable to an obstacle course which is to be run at speed) will be found in the Appendix.

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CHAPTER 11

ATHLETICS

82. ATHLETICS IN THE CONDITIONING PROGRAM. a. Athletics contribute in so many ways to the increased combat efficiency of soldiers that they deserve a prominent place in the physical training program. The value of vigorous sports and games from the conditioning standpoint is well recognized. Because of the competitive nature of athletics and their natural appeal, the men participate in them with energy, intensity, and enthusiasm. They develop many valuable military skills. Athletic competition provides a laboratory where many valuable character qualities such as initiative, persistence, cooperation, confidence, physical courage, and the ability to think and act quickly and effectively under pressure are practiced and developed. Athletic teams are a strong unifying influence and provide one of the best means of developing esprit de corps. Finally soldiers enjoy athletics: competitive games offer a diversion from military duties and give the soldiers an opportunity for wholesome self-expression.

b. Because of their popularity, athletics are the most effective means of developing and maintaining the interest and cooperation of the men in the rest of the physical training program. Men will gladly engage in the more purely conditioning activities such as conditioning exercises, log drills, guerrilla exercises, "strength courses," and grass drills if they know they will be able to play speedball, soccer, touch football, or push ball afterwards.

c. Sports and games require more space and equipment than other physical training activities. Many of the sports require such extensive facilities and equipment that few organizations are able to provide them for more than a small percentage of the men. The best solution to this problem is to stagger physical training periods throughout the day. The problem of facilities may also be overcome, in part, by selecting sports which use large numbers of participants, by increasing the number of players in certain sports, by modifying the size of the playing areas, and by careful scheduling.

d. No one sport reaches and develops all the important aspects of physical fitness. For example, such activities as soccer, speedball, and touch football do not adequately exercise the arm and shoulder girdle muscles. For this

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reason, various types of conditioning activities must be used in conjunction with athletics. In addition to exercising all the muscle groups, such conditioning activities serve as a warmup for the sports. The men should be adequately conditioned before they engage in the more vigorous sports, otherwise the competitive factor may cause them to go beyond their physical limitations.

83. RECREATIONAL ATHLETICS. Athletics in the prescribed *physical training program* must be justified in terms of the contribution they make to physical conditioning. This standard of selection will exclude some popular sports such as softball, baseball, volleyball, etc. However, in addition to the athletics included in the prescribed physical training program there is opportunity for a considerable amount of activity of this nature during off-duty recreational hours. The only criterion for the selection of a sport for the recreational program is that it provides recreation for soldiers. Any sport which the men enjoy and for which facilities are available may be included in the recreational program, regardless of its conditioning value or lack of it. The point to be remembered is that the two programs have different objectives, and activities selected in each case must best serve these objectives.

84. INFORMAL ATHLETICS AND GAMES. The athletics included in the physical training program are of two types: informal and organized. In the informal athletics and games program are those sports in which the competition is not highly organized. The teams vary from day to day, and no regular schedule is played. The games, themselves, are not highly organized and can be played with little or no advance preparation. For activities of this type, see TM 21–221.

85. ORGANIZED ATHLETICS AND GAMES. a. In organized athletics and games the competition is carried on in a more formal fashion. Leagues are formed with representative teams from each unit. Regular schedules are played, officials are provided, and official rules are followed. The object is to determine the championship in a particular sport. Ordinarily this type of athletics is carried on during the off-duty recreational period. It is possible, however, to conduct such a program during the regular physical training period.

b. Inter-unit tournaments in various sports may be conducted during physical training periods. The team representatives report to the proper area for the game while the remainder of the men continue with their usual physical training program. The only problem presented is that the contest must be terminated within the time allotted for physical training. If facilities are available, competition in three or four sports may be carried on simultaneously in this fashion. As a company or platoon forms for physical training, the team members in one sport are directed to one area: the team members of another sport to another area; and so on.

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c. Sometimes the lower levels of competition are conducted during the regular physical training hours, while the higher levels, involving better teams and a strong spectator interest because of championship considerations, are arranged during free time. This practice often helps develop solidarity and loyalty within units represented by the competing teams.

d. The following sports are the type which can be carried on most satisfactorily during the regular physical training program:

SPRING	SUMMER	FALL	WINTER
Pushball	Track and Field	Touch Football	Basketball
American Ball	Cage Ball	Box Basketball	Soccer
Field Handball	Speedball	Line Soccer	Boxing
Mass Soccer	Military Field Meet	Cross Country	Wrestling
	Swimming		

All the above sports are vigorous conditioning activities which lend themselves well to tournament competition.

e. Competition in basketball, softball, volleyball, horseshoes, tennis, table tennis, badminton, bowling, and other such sports should be conducted in the recreational athletic program which is carried on during off-duty hours.

86. PROVISION OF INSTRUCTION. One of the most effective methods of increasing interest and participation in athletics is to provide instruction in those activities with which most men are unacquainted. Such instruction can be conducted during the regular physical training periods. Careful planning is required to keep all men continuously engaged in vigorous activity.

87. OFFICIATING. Every effort should be made to provide good officiating for all athletic competition. Nothing causes dissatisfaction among participants in athletic contests more quickly than poor officiating. If good officials are not available, provision should be made to develop them.

88. RULES AND FUNDAMENTALS OF PLAYING. For playing rules, including dimensions and marking of fields, necessary equipment, and information on the fundamentals of play in the organized sports and games, see TM 21–220.

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CHAPTER 12

RELAYS

89. CONTRIBUTION OF RELAYS TO THE PHYSICAL TRAINING PROGRAM. a. Well selected relays are excellent conditioning activities and in addition provide stimulating competition and enjoyment to the participants. Interspersing them throughout the program for short periods of time will provide a desirable change of activity.

b. To increase the conditioning value of relays the teams should be limited in number otherwise the men will spend too much time awaiting their turns and too little time in actual participation. Teams should consist of from six to ten men although somewhat larger numbers should be used when the participants are paired off, as in the horse and rider or wheelbarrow relays. It is also important that the distance traversed be great enough to provide adequate exercise. If the area is small, the performers may accomplish this purpose by performing the activity a second or third time.

90. SELECTION OF RELAYS. a. From the many relays which are available, only those which provide vigorous exercise should be included in the physical training program. The relays selected should be simple and easy to administer. The rules and regulations should be easily understood and the technique easily mastered. In selecting the relays the interest of the men and the available equipment and facilities must also be kept in mind.

b. Only relays which can be satisfactorily controlled should be chosen. For example, a walking relay is apt to degenerate into an awkward run, it is not easy to standardize. But a "crab walk" is hard to perform incorrectly and hence is readily controlled.

91. ADMINISTRATION OF RELAYS. a. The secret of successful relay administration is to have all participants thoroughly understand the rules and then to require strict adherence to them. The spirit of competition is so intense that there is a strong tendency for the competitors to violate the rules. Those officiating must be competent and impartial. A team should not be disqualified when infractions occur. Instead, a foul should be charged for

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each infraction, and then the number of fouls added to the team's order of finish. The team with the lowest total wins.

b. On days when relays are to be used during the physical training period, the instructor should plan the activities, procure the needed equipment and see that the necessary lines are clearly marked well in advance of class time.

c. Every man should participate. When the teams have unequal numbers, the competition may be equalized by having some individuals participate twice in a relay. When extra men cannot be avoided they should be utilized as officials. It is very helpful to appoint a non-commissioned officer or some other leader as captain of each team. Each leader is then responsible for his group and should coach his team.

d. The distance selected depends upon the activity. For example, a running relay should be from 60 to 200 yards in length, but an all-fours run should not exceed 30 yards and a bear walk relay should not ordinarily exceed 20 yards. The distances may be progressively increased as the condition of the men improves.

e. Competition may be maintained at a high level throughout a number of relays by determining the winning teams for the entire competition. This can be done by awarding points to the various teams on the basis of their position at the finish of each relay. The first team to finish a six-team race receives six points and the last team to finish receives one point. The team with the greatest number of points for all the relays is the winner. A forfeit occasionally imposed on the losers adds to the interest.

f. If more than eight teams participate in a relay race, it becomes difficult to select the place winners accurately. The recommended number of teams for relay competition is four, five, or six. If more teams are available, they should be divided into groups of four, five or six. The winners of each group should then compete.

g. Difficulties commonly encountered in conducting relays may be obviated by the following procedures:

(1) The last player in a relay race should be conspicuously identified by tying a handkerchief around his head or arm, taking off his shirt, putting on his hat or taking it off, or by some similar method.

(2) Another practice which is helpful in determining the progress of the race and eventually the winner, is to have each player sit on the ground or assume a squatting position upon finishing.

(3) The problem of runners starting too soon can be solved by having judges at the starting line.

(4) To prevent contestants from turning before running the full distance, they should be required to run around a peg or pole.

(5) Batons, handkerchiefs, short sticks, or other objects should be passed from one runner to the next when the circle method is employed.

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92. METHODS OF CONDUCTING RELAYS. There are 4 different methods of conducting relay races:

a. Lane Method. *(1)* Teams of the same number of men are arranged in parallel columns 10 feet apart behind a common starting line. All teams are lined up and face in the same direction.

(2) A turning point for each team is established directly to its front. The distance from the starting line to the turning point varies with each race. Each performer travels from the starting line to and around the turning point and back to the starting line, where he touches off the next one of his teammates. This continues until all have taken their turn.

b. Shuttle Method. Two starting lines are used. These are parallel and the desired distance apart. Each team counts off by two's. The odd-numbered half of each team faces the even-numbered half across the distance to be run. The race is run by having the No. 1 men of each team run to the opposite line and touch off the No. 2 men of the team, who runs back and touches off the No. 3 men, etc. This continues until all the men have taken their turn, or until all have returned to their original positions. In this last situation, all men perform twice.

c. Circle Method. This type of relay is conducted around a track which may readily be devised by placing four objects so they form a rectangle of the desired size. The track is considered to be outside the objects. This type of relay may be conducted in two ways:

(1) By having all the teams use a common starting line.

(2) By having each team use a separate starting line, these being evenly distributed about the track. To run the race, the first player of each group travels around the track. When he gets back to his starting line, he touches off the next player of his team. This continues until all the men have run.

d. Cumulative Method. This method is most effectively employed for throwing and jumping contests. The competing teams form parallel columns. The No. 1 man of each team broad jumps or throws. Then the No. 2 man jumps or throws from No. 1's mark, and so on. The team jumping or throwing farthest from the base line wins.

93. RELAY RACES. While most relay races involve some form of running, many other methods of locomotion may also be used. The following selected relays are suggestive of some of the different types which may be utilized.

a. Wheelbarrow Race. The players of each team line up in a column paired off. The first man walks on his hands; his partner grasps his ankles. They advance to the distance line (60 feet) behind which they exchange positions and return to the starting line. After the first two men cross back over the starting line, the next pair start. The rear man must grasp the *ankles* of his partner. The first team to finish wins.

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b. Back Support Relay. The players of each team line up in a column paired off. The front man of the first pair sits on the ground with his feet on the starting line and his trunk inclines backwards. His head rests in the cupped hands of his partner who stands behind him. At the starting signal the front man arches his back and with his weight supported on his feet and by his partner, he moves to the distance line (50 feet). Behind the distance line the partners exchange positions. After the first pair cross back over the starting line, the next pair proceeds.

c. Crab Walk Race. Each team lines up in a column. The first man of each team assumes the crab walk position with his feet forward on the starting line. At the starting signal he moves forward and progresses to the distance line (40 feet). He touches it with his feet and then returns to the starting line in the reverse position with the head and hands leading. The second man may not start until the hand of the first man touches the finish line.

d. Horse and Rider Relay. Each team lines up in a column. At the signal to start, the second man in each column leaps upon the back of the first man who carries him across the distance line (75 feet) pick-a-back fashion. At the distance line, the rider dismounts and runs back to the starting line. There he picks up the third man in the column, and carries him to the distance line where the first player has remained. This continues until the last man is carried across the distance line.

e. Two-legged Race. Each team lines up in pairs. The partners stand side by side and grasp each other around the waist with the inside arm. Inside legs are lifted off the ground and held together. At the starting signal the first pair travel to the distance line (60 feet). Behind the distance line they exchange positions so that opposite feet of each man is outside. When they cross the finish line, the next pair starts.

f. Obstacle Race. Each team lines up in a column. Four Indian clubs are set up 15 feet apart with the first club 15 feet from the starting line. The distance line is 15 feet beyond the fourth club or 75 feet from the starting line. At the starting signal the first man runs down his lane knocking each club down. He continues to the distance line, then returns and picks up each club and places it on its original spot. If a club falls before he reaches the starting line, he must return and stand it up. This continues until each man has run.

g. Caterpillar Race. The men on each team are seated one behind the other. Each man grasps the ankles of the man behind him. He must retain his grasp on his teammate's ankles at all times. At the starting signal the men move forward as best they can, continuing to hold their teammate's ankles. The last man in line may use his hands in any manner to help the team along. The first team to get across the distance line intact (60 feet) wins. If the line breaks, it must be joined together again before it proceeds.

h. Leap Frog Relay. Each team lines up in a single file. The players are

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6 feet apart and bent forward at the waist with hands on knees. At the starting signal, the last man leaps over each man in the column in turn. When he gets to the front he assumes a bending position 6 feet in front of the first man. As soon as a man becomes the rear man he is eligible to start jumping over his teammates. This keeps the action more lively by having several men jumping at the same time. The relay ends when the original No. 1 man is back again at the head of the line. The relay may be continued until all the men have jumped over each other *two* or *three* times.

i. Frog-jump Relay. Each team lines up in a column. The first man assumes a squatting position on the starting line. At the starting signal he progresses to the distance line (50 feet) and back by leaping forward, catching his weight on his hands, and bringing up his legs to the squat position. Similar relays may be organized from guerrilla exercises such as All-Fours, Bear Walk, Lame Dog or Hop. (See par. 66.)

j. Fireman's Carry Relay. The players of each team line up in pairs, one behind another. One man in each pair carries his partner to the distance line (75 feet) using the Fireman's Carry (see par. 66). At the distance line the pair exchange places and return to the starting line. As a variation the man to be carried lies on the ground and his partner picks him up to the proper position. This relay may be performed with other carries. (See par. 66.)

k. Hold-it Basketball. Each team lines up in a column. The first man of each team holds a basketball behind his back and runs to the distance line (45 feet). There he puts the ball between his legs and holding it in this manner (between his legs) returns to the starting line. He does not give the ball to the next man until he has crossed the starting line. If he drops the ball, he must pick it up and replace it at the point where he dropped it before he can continue.

l. Goat-butting Relay. Each team lines up in a column. A ball (preferably a medicine ball or a partially deflated basketball) is placed in front of each team. At the starting signal, the first player drops to his hands and knees and butts the ball toward the distance line (50 feet) with his head. He may run or crawl in following the ball and may drive at it in butting it, but he may not strike it with any part of the body except the head. After reaching the distance line, he butts it back to the second player who repeats.

m. Chariot Race. Teams are lined up in columns of 12, 15 or 18 men. The players work in groups of three. One man stands erect. The second man bends forward at the hips and grasps the first man at his hips. The third man rides the second man. At the starting signal the three men run to the distance line (60 feet) and return. If the rider falls off, he must remount and continue. When the first three men have returned to the starting line, the next three start. The men may exchange positions behind the distance line.

n. In and Out Relay. Each team lines up in column with players 5 feet

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apart. At the starting signal the first player runs back through the column in a zigzag fashion. He alternates going to the right and left of his teammates. Upon completing the run he lines up 5 feet behind the last man. As soon as the first runner has passed the second man the latter is eligible to run. This continues until all the players have returned to their original positions. The team which finishes first is the winner. It may be desirable to have this relay continue until all men have run through their entire team two or three times in succession.

o. Tunnel Relay. Each team lines up in a column. The men spread their feet in a straddle position. At the signal the rear man drops to his knees and crawls under the legs of his teammates until he reaches the front of the line. When he reaches the front of the file, he arises to the straddle position. Each man in turn starts crawling as soon as he finds himself the rear man. The relay ends when the original front man is at the front of the file. A variation of this relay is for the men to stand side by side in straddle position. Then each rear man crawls from left to right through the legs of the men.

p. Overhead Relay. Each team lines up in a column. The first player passes a ball (or other object) back over his head to the No. 2 man, who passes it to No. 3, and so on down the line until the last player is reached. As soon as each man has passed the ball back he sits down. When the rear man receives the ball, he straddles the line and goes to the front. Each seated man rises as soon as he has been passed over. The relay continues until all men return to their original positions.

q. Jump Stick Relay. Each team lines up in a column. The first player of each team has a light stick, soft ball bat, rope, or belt. At the starting signal all the No. 1 men run to the distance line (40 feet) and return. As they return to the starting line they hand the other end of the stick to the No. 2 players. Each pair then race to the end of the line holding the stick about knee high. The rest of the players jump in turn as the bar approaches to avoid being hit. When the pair reach the end of the line, they return to the starting line carrying the bar waist high. The rest of the players in line squat to avoid being hit. When the pair return to the starting line the No. 2 man continues on to the distance line while No. 1 goes back to the end of the line. Upon returning to the head of the column, No. 2 hands the end of the stick to No. 3. The relay continues until the first player returns to the front of the line. If a player loses hold of the stick, his partner must not continue until he has resumed his hold.

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CHAPTER 13

COMBATIVE ACTIVITIES

Section I. COMBATIVE CONTESTS

94. VALUE OF COMBATIVE CONTESTS. This type of activity consists of individual and group contests of a rough and strenuous nature. The purpose of such contests is to develop aggressiveness, initiative, and resourcefulness in personal combat; to develop proper footwork and weight control; and to train the men to react violently with a maximum of energy for the purpose of overcoming an opponent. Regardless of previously developed habits in maneuvering in such contests, the men should be instructed to attempt to overthrow the opponent at once. Hence, in these contests, every man is trained to give his all. Defeats suffered in early practice will be compensated for by habits of aggressiveness and by the quick and adaptive thinking which grow from such practice.

95. ADMINISTRATION. a. The physical training officer, while encouraging strenuous combat, should guard carefully against conduct which might result in injury. Combative activities should be included in the program about two or three times a week. Different exercises should be tried, starting with the less strenuous and gradually progressing to the more strenuous. Preference should be given to the exercises most favored by the men. A spirit of clean play, coupled with an all-out effort to win, should be fostered.

b. The contests in paragraph 96 are divided into dual, and group or team, contests. Many of the dual contests may be given in the usual open-order formation. At first, until the procedure is understood, the exercises should be conducted to command. Later, they should be conducted informally. Group or team activities are conducted in such group formations as are appropriate.

c. The dual contests may be conducted in several ways. The competition should extend beyond that of only each individual against his partner. An elimination tournament can be arranged to determine the best performer in each contest. Team competition can be carried on by awarding the winner of each contest one point for his team. Both these methods will greatly increase interest in combative contests.

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d. Dual and team combatives may be conducted in a number of ways, and the instructor should consider each of the activities to determine to which of the following variations it lends itself:

(1) Dual competition (one man against another).

(a) No boundaries.

(b) Circle. One man tries either to defeat the opponent within the circle or to eject him from the circle. If he succeeds in either, he wins.

(c) Double circle. Two concentric circles are drawn, one about 20 feet in diameter and the other about 6 feet in diameter. The contestant wins if he throws or otherwise defeats his opponent between the two circles, or if he forces his opponent into the smaller circle or out of the larger circle.

(d) Line competition. The contestant wins if he pulls his opponent across a line, on either side of which they start.

(e) Zone competition. The contestant tries to eject his opponent from the zone, usually a strip of territory about 10 to 20 feet in width and length.

(2) Team competition.

(a) Members of one team may cooperate with one another to defeat the opposing team, "ganging up on" men of the opposing team.

(b) Single-circle formation. Members of each team attempt to eject all opponents from the circle.

(c) Double-circle formation. Each team attempts to force opponents out of large circle or into small circle.

(d) Line formation. Members of each team attempt to pull or push opponents over goal line.

(e) Zone formation. Teams attempt to eject each other from the zone.

(f) Rotating team. After the members of a team have been ranked roughly according to ability, they then count off. For example, the members of each team may be numbered from *one* to *ten.* First, the No. 1 man from each team engages in combat. The loser is immediately replaced by the No. 2 man on his team. The victor takes on all opponents as long as he wins. As soon as he is defeated, he is replaced by No. 2 man on his team. This procedure continues, informally, until the instructor calls *time* or formally until one man has conquered five opponents in succession. Obviously, where a better opponent is opposing a poorer one, it is to the advantage of the poorer opponent's team to have their member attempt to tire the good opponent while attempting to defeat him. The successor to the poorer opponent may then be able to defeat the tired man. When all of the members of any given team have competed in turn, the No. 1 man on the team starts again.

96. CONTESTS. a. Individual competition.

(1) Pull-hands. Establish three parallel lines 10 feet apart. The men are paired so they face each other about 3 feet apart, both equally distant from

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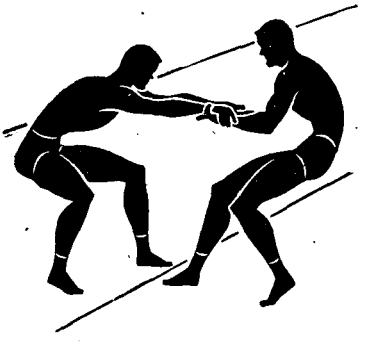
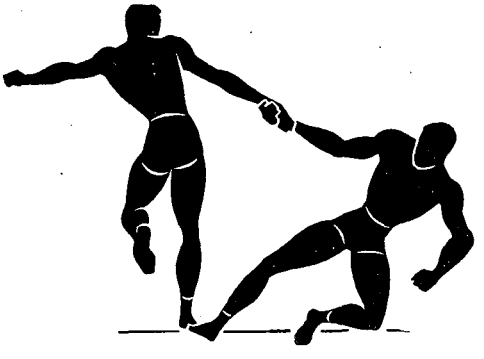
a middle line. They grasp each other's wrists. At the starting signal, each man attempts to pull his opponent back across his base line. Any contestant pulled across his opponent's base line is loser. After a predetermined time, any player pulled across the middle line is also the loser. If the hands become separated, they are rejoined at the point of separation as in the beginning. The contestant who first wins three bouts is the winner.



(2) Hop and pull-hands. The men are matched in pairs. Each man grasps his opponent's right hand, and hopping on his right foot, attempts to pull his opponent over the middle line. Either contestant automatically loses if he



touches his rear foot to the ground. The contestant who first wins three bouts is the winner. On successive bouts, they alternate hands and feet.

(3) Back to back push. Two contestants stand back to back with elbows

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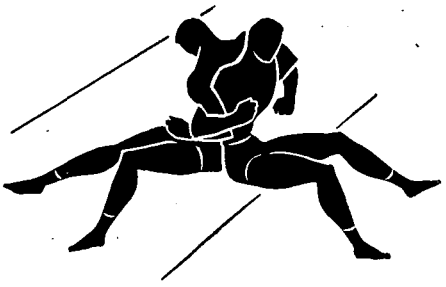
locked. Each contestant has right arm inside opponent's left arm. A base line is established 10 feet in front of each contestant. At the starting signal, each, by pushing backward attempts to push the other over his (the opponent's) base line. The contestants are not allowed to lift and carry their opponents. Pushing only is permitted. A contestant pushed over his own base line loses the bout. The contestant who first wins three bouts is the winner.



(4) Back to back tug. Two contestants stand back to back with both arms linked at the elbows. Each contestant has his right arm inside opponent's left arm. A baseline is established 10 feet in front of each contestant. At the starting signal, each attempts to drag the opponent over his baseline. Lifting and carrying are permitted. Contestants must maintain original positions with

arms linked. Either contestant carried across his opponent's baseline loses. After a predetermined time, the player carried the farthest is also the loser. The contestant who first wins three bouts is the winner.

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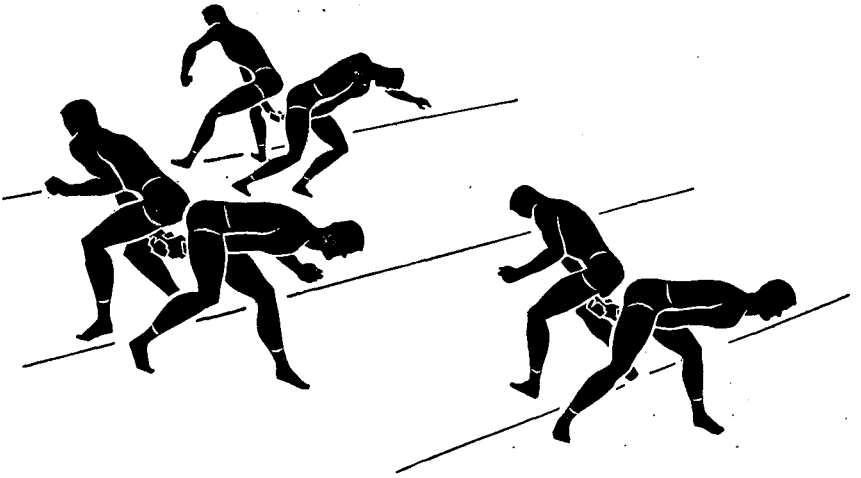
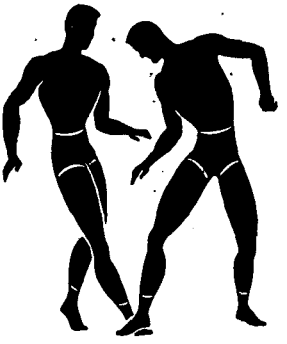
(5) Back to back, arms between legs. Contestants are paired off, back to back. A baseline is established 10 feet in front of each man. Each bends forward and, extending his right arm between his legs, grasps his opponent's right wrist. At the starting signal, each attempts to pull his opponent across his baseline. After a predetermined time, any player who has pulled his opponent over his baseline or over to his side of middle line is the winner. Repeat with left hand and then both hands. The contestant who first wins two bouts is the winner.



(6) Knock them down (any method). At starting signal, each man attempts to knock opponent off his feet in any manner he chooses. He may tackle, push, pull, lift or wrestle. First man who has any part of body except feet touching ground loses.



(7) Step on toes. The men are paired off. At starting signal, each man attempts to step on toes of his opponent. Activity continues until the stop signal. This is a vigorous activity if continued for about a minute.

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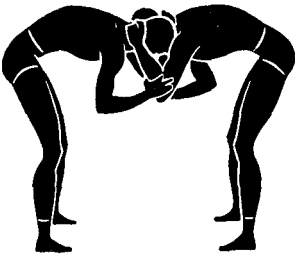
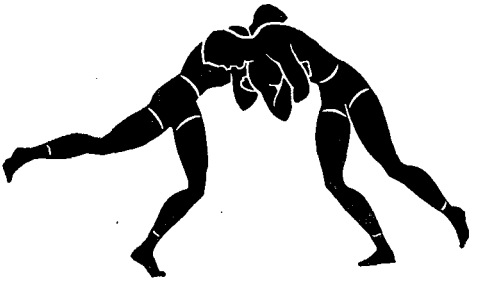
(8) Arm lock wrestle. The contestants sit on the floor, back to back, with legs spread and arms locked at the elbows. Each contestant has his right arm inside his opponent's left arm. At the starting signal, each endeavors to pull his opponent over to the side so that his left arm or shoulder touches the floor. The contestant who first wins three bouts is the winner.

(9) Wrestling from Referee's Hold. The men assume what is known in wrestling as the *referee's hold.* Each contestant grasps back of opponent's neck with left hand and opponent's left elbow with right hand. In this position each man attempts to pull or push his opponent across a line or out of a circle.



(10) Bulling. The men assume the referee's hold, each grasping opponent's neck with left hand and opponent's left elbow with right hand. Each attempts to force his opponent to move one foot by pushing, pulling, or otherwise manipulating him.

(11) Rooster Fight. Each contestant, with arms folded across chest, hops on right foot. He uses right shoulder and right side of chest to butt his



opponent. The object is to make his opponent lose his balance and fall, to unfold his arms, or to touch his free foot to the ground. The contestant who first wins three bouts is the winner.

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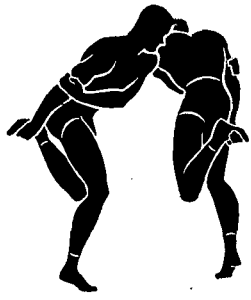
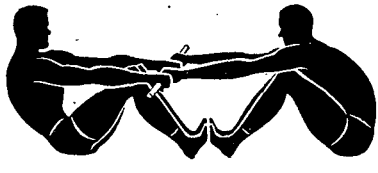
(12) Rooster Fight. Each contestant grasps his left foot with right hand from behind, and right arm with left hand. He hops on his right foot, and by butting his opponent, or by feinting and sudden evasions, forces him to let go of foot or arm. (The name is derived from the position of left leg.)



(13) Stick Pull. Three parallel lines are established 10 feet apart. Two men grasp a wand, stick, or softball bat with both hands. Starting at the middle line, each man attempts to pull his opponent over his base line. The contestant who first wins three bouts is the winner.

(14) Pull-Stick Tug-of-War. Two men are seated on the ground with soles of feet in contact. Each contestant grasps a stick or softball bat so that it is directly over their feet. At the starting signal, each contestant tries to pull his opponent from sitting position to feet.



(15) Stick-Twist. With right palms upward and left palms downward, both contestants grasp a wand or softball bat. Upon the starting signal, the

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contestants try to twist the stick to the left, or counter-clockwise. After several bouts of this nature, the position of palms is changed, and the stick is twisted to the right, or clockwise. The contestant who first wins three bouts is the winner.

(16) Stick-Wrestle. With right palms upward and left palms downward both contestants grasp a wand or softball bat. At starting signal both wrestle for the stick, attempting to take it away from the opponent by any means.

(17) Wrist-Wrestling. Two men lie on backs, side by side, and head to feet, in such a position that the insides of right (left) elbows are side by side; fingers are interlocked; feet are spread and other arm is by side. Each man tries to press his opponents' wrist down over against his own side. The contestant who first wins three bouts is the winner.

(18) Hand-Wrestling. The men stand facing each other. Right feet are forward and braced side by side. The men grasp right hands on the first bout (left in second bout, etc.), with little fingers interlocked. Each attempts by pulling, pushing, making a sideward movement, or otherwise maneuvering to force his opponent to move one or both feet from the original position. The contestant who first wins three bouts is the winner.

(19) Harlequin Wrestling. Each man stands on his left (right) foot, holding his opponent's right (left) hand. The object is to overbalance the opponent or to force him to put his free foot to the ground. Pushing with shoulders is not permitted. A modification of this contest is to hold free foot with free hand.

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(20) Indian Wrestling. Two men lie on the ground, side by side, with heads in opposite directions. They link right elbows. Upon the signal of the instructor or by mutual agreement, each man raises his right leg, with knee approximately straight, far enough to engage heel of his opponent. To time the contest, each man usually raises his leg three times rhythmically, and the third time engages the opponent's heel, attempting to roll him over backward. The right leg is used for three bouts, then the left leg for three bouts.

(21) Wrist Bending. Opponents pair off and face each other; raise arms forward; and with palms up, lock fingers. At the starting signal, each man

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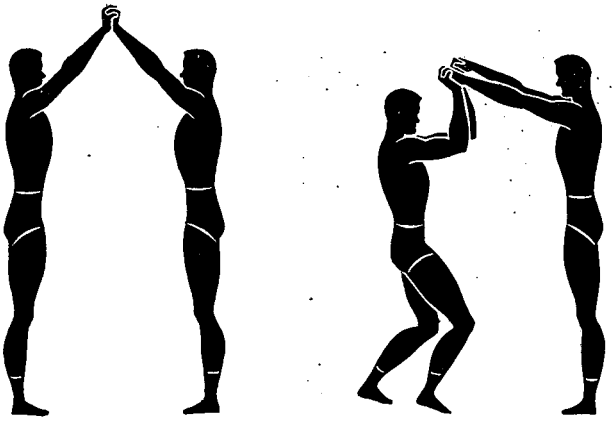
attempts to bend his opponent's wrist. The hands are brought downward between contestants. The man winning three bouts first, is the winner.



(22) Wrestling to lift off feet. The contestant maneuvers to grasp the opponent with front or rear waist-hold, and to lift him off his feet.

(23) Wrestling. Each man tries to force his opponent to touch the ground with some other part of his body than his feet.

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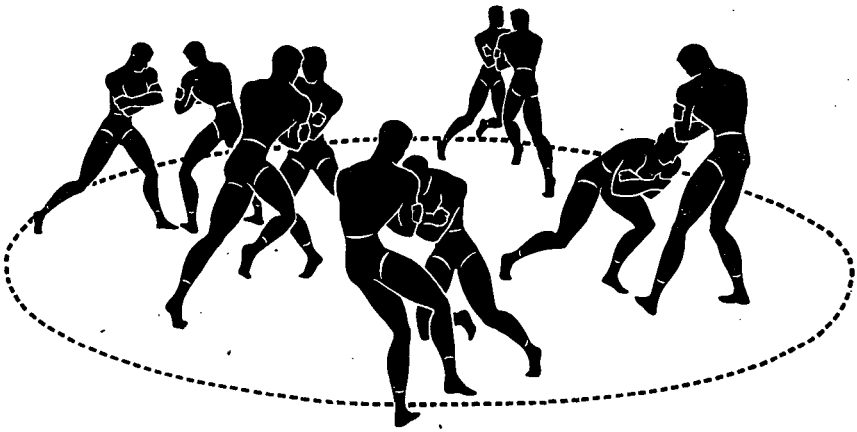
b. Group or team competition.

(1) Bull in ring. No equipment needed. Group forms in a circle holding hands. One man, termed the "Bull", is placed in the center. If there are more than 20 men in the ring, there are two "Bulls". The "Bull" tries to break out by charging the ring so the clasped hands are forced apart. If the "Bull" gets out, he immediately tags another player who becomes "Bull". This game may be played by two teams, each of which forms a circle. An opposing player is the "Bull" in each circle. At the starting signal each attempts to break out by going over, under or through. The first man to break clear wins a point for his side. The contest continues until each man has been a "Bull" in his opponents' circle.

(2) Ring push. Players are divided into two clearly designated teams, both of which enter a large circle. At the starting signal, players of each team attempt to push all opponents out of circle. Players forced from the circle are eliminated. All players must keep arms folded across the chest throughout. The contest continues until all the members of one team are eliminated.



(3) Line Charging. Two teams form lines facing each other about 1 foot apart. The players of each team are 1 foot apart. A line is established 10 feet behind Team "B." At the whistle, team "A" attempts to break through the

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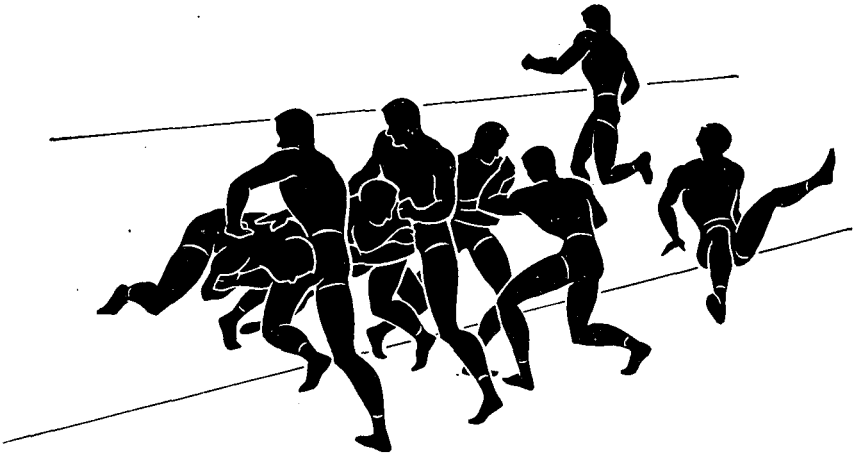
line of team "B." Team "A" may use its hands; team "B" may not. The players of team "B" usually assume a crouched position. After 3 to 5 seconds (usually 3 at first, 5 seconds later), the referee blows his whistle and counts the number of men who have broken through the opponent's line and reached the baseline. The team which has the greatest number of contestants reach the baseline in three attempts wins. Indoor competition may be conducted on a string of mats.



(4) Sitting push out of circle. This activity is performed in the same manner as *(2)* above. However, all men are seated on the ground, back to back.

(5) Island. The players are divided into two distinctively marked teams. The teams line up on opposite sides of an area approximately 10 feet square. At the starting signal, all players rush forward to the middle of the area where they attempt to remain. The players attempt to throw their opponents out of the area. If a player is forced from the island he may return if he can before the contest is terminated. The team having the greatest number of players on the island at the end of 2 minutes wins the game. Indoors a mat may be used as the island.

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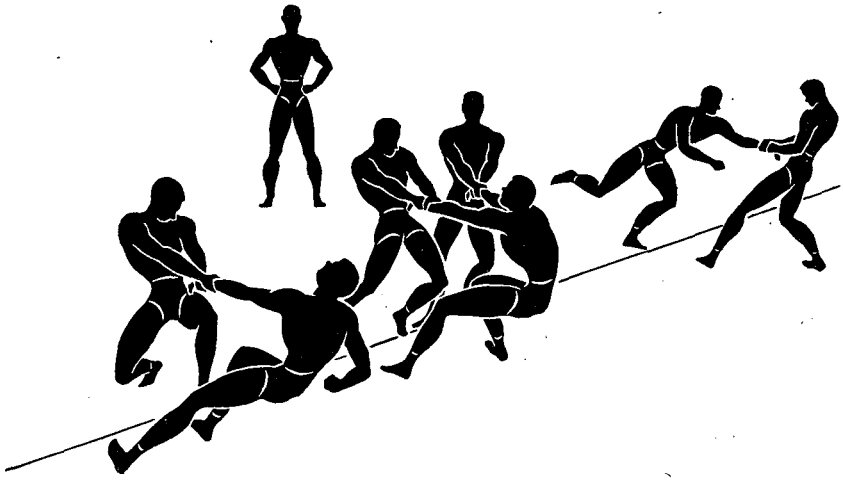
(6) Catch and pull tug-of-war. Two teams line up on either side of a line on the ground. The men attempt to grasp an opponent's hand or wrist and pull him across the line. Two or more of one team may gang up on one opponent. When an individual touches the ground on the other side of the line, he retires to the rear of his captor's territory as a prisoner. The contest continues until all men of one team have been pulled across the line. If any men refuse to approach closely enough to engage their opponents, the referee declares them defeated. Such practices should be discouraged, however. As a variation, those pulled across the line may join with their opponents in attacking former teammates continuing until no one is left on one side.



(7) Horse and rider fights. Players are divided into two teams and paired off. One player of each pair sits astride the hips of his partner and locks his feet in front. At the starting signal, the "horses" move forward so that the "riders" can reach each other. Each "rider" attempts to overthrow an opponent. The "horses" are not allowed to help the "riders". The "riders" are allowed to use all fair wrestling tactics; they are not allowed to interfere with the "horses". The "rider" who touches the floor in any way, either forced down from his "horse" or overthrown with his "horse" first loses. Last team

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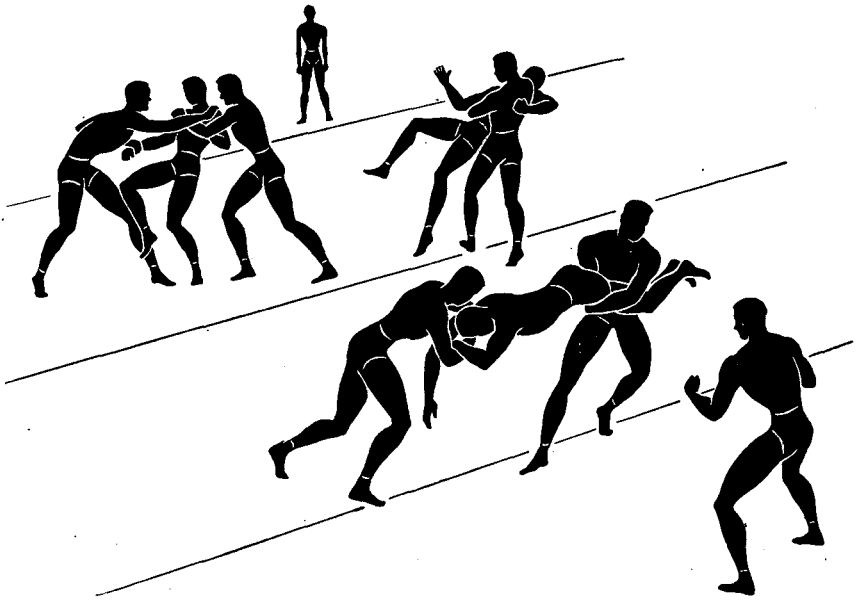
up is the winner. This contest should only be conducted where it is not dangerous to fall.

(8) Goal line wrestling. This activity is performed similarly to *(6)* above except that a line is drawn 15 feet behind each team and when a player is carried or pulled across line behind his opponent's side, he is declared "dead" and out of competition.



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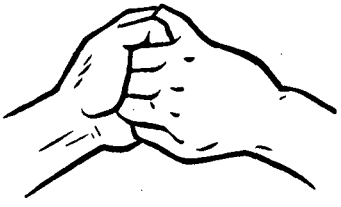
(9) Human tug-of-war. Two teams line up in two columns facing each other. Team members stand close together. Each man places his arms about the waists of the men in front of him (grasping his own left wrist with his own right hand is the strongest grip). The leading man of each team grasps his opponent about neck and shoulders. The team breaking first or having one or more men pulled over the line separating the two teams after 30 seconds is the loser.

Section II. WRESTLING

97. GENERAL. Holds which are executed from the *upright position* constitute the most valuable aspect of wrestling from the military standpoint. In addition to their practical value in hand-to-hand combat, the practice of these holds provides excellent exercise. Only a few of the most practical holds are described below. Where used, *A* indicates the aggressor; and *B* the person attacked.



a. Wrestler's Hand Grip. Fingers of each hand should be flexed and hooked together with left palm up and right palm down. Thumb of left hand

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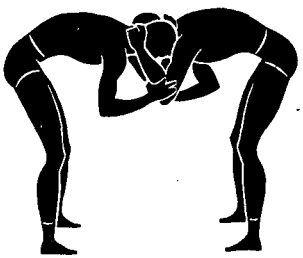
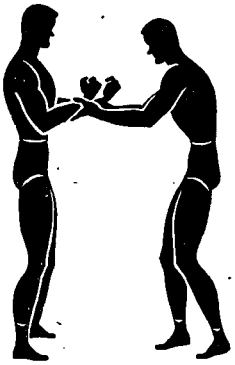
is placed between fourth and little finger of right hand, and thumb of right hand is tucked inside little finger of left hand. This grip protects the thumbs and fingers so an opponent cannot grasp, bend, or break them. The men should cultivate the habit of grasping hands in this manner when they are attempting to hold an opponent around the body.

b. Referee's Hold. Each contestant's left hand is behind his opponent's neck, and his right hand grasps his opponent's left elbow. Feet are apart and back out of reach, and all joints are slightly flexed. From this position the contestant may pull or push his opponent around until he gets an opportunity to secure an effective hold. Many holds may be obtained from this position.



c. Release from Double Wristhold. If *A* grasps both of *B's* wrists with his hands, either with *B's* hands pointed upward or downward, *B* brings forearms



inward against *A's* thumbs. If *B's* wrists are grasped from above, he pulls inward and downward; if *B's* wrists are grasped from below, he pulls inward and upward.

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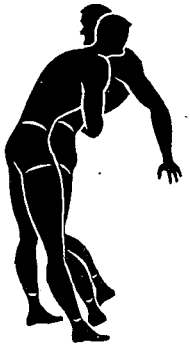
d. Front Waist Hold. From a position of referee's hold, *A* lifts *B's* left elbow and slips inside *B's* left arm, wrapping both arms around *B's* waist under his arms. *A* pushes forward with chin and shoulder and bends *B* backward to the ground.



e. Defense for Front Waist Hold. To prevent *A's* grasping him around the waist, *B* should keep inside *A's* arms with elbows bent. If *A* succeeds in grasping *B's* waist, *B* should move his feet well to rear and encircle *A's* arms with his arms as tightly as possible, pressing against *A's* shoulder with his chin. If *B* is strong, *A* will weaken rapidly and be forced to let go.

f. Methods of Going Behind Opponent. To get behind an opponent, two methods are suggested (either may be done from right or left side, according to which of the opponent's arms is forward):

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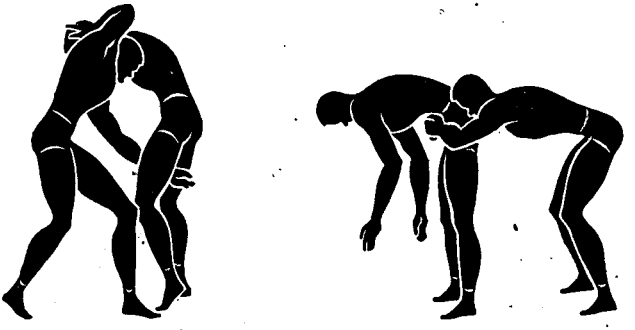
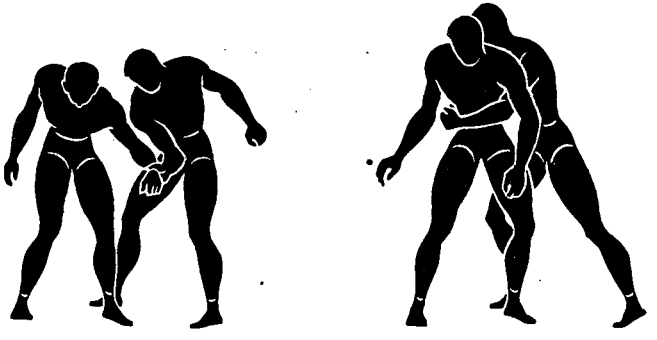
(1) Arm Push-up. From the position of referee's hold, *A* stands and presses *B's* left elbow upward with his right hand. At the same time *A* steps forward with his left foot outside and behind *B's* left foot. *A* places left hand in *B's* crotch, and pivots around *B* on left foot, and encircles *B's* waist with arms. *A* keeps his head away from a position over *B's* shoulders, otherwise *B* would be able to reach up, grasp *A's* head, and throw him over his shoulders.



(2) Arm Drag. *A* grabs *B's* left wrist with right hand and pulls *B's* left arm across in front of his body and to *A's* left. At the same time *A* thrusts his left hand under *B's* left armpit and continues to pull, twisting *B* to *B's* right and to *A's* left. *A* then slips around behind *B* with right foot and puts right arm around *B's* waist.



(3) The block for this hold is for *B* to straighten his left arm vigorously when *A* starts to pull it so that *A* cannot swing around behind him.

g. Rear Take Downs. There are several different methods of taking an opponent down from the rear.

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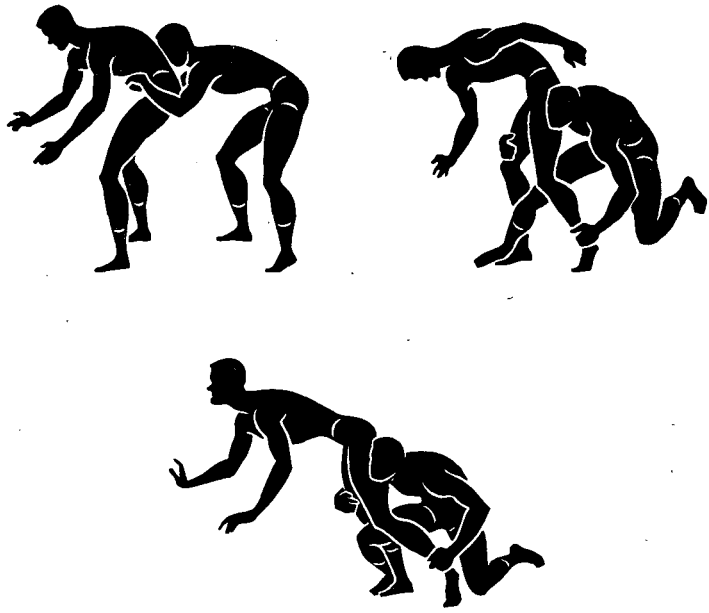
(1) Body Slam. When *A* is behind *B* with a waist hold, he lifts *B* from the ground, whips his legs to the right or left and throws him to the ground. The block for this hold is for *B* to hook his toes behind *A's* legs to prevent *A* from throwing him to the ground.

(2) Drop with Leg Trip. A is standing behind *B* with arms locked around *B's* waist, and head resting on side of *B's* back. *A* drops to his left knee and grabs *B's* left ankle with left hand. *A* places his right leg in front of *B's* right leg, contacts *B's* buttocks with shoulder, and causes *B* to trip over *A's* right leg, forcing *B* to the ground.



(3) Reverse Crotch Hold. A is behind *B* with arms around *B's* waist. *A* suddenly drops downward, bending knees. Holding *B's* waist with left arm, *A* shoves right arm between *B's* thighs as far as possible, grasping *B's* belt with right hand. *A* grabs *B's* shirt collar with left hand and rising to feet, lifts *B* off the ground. *A* swings *B's* legs to the right, and throws *B* to the ground. *A's* arm thrust between the thighs to grasp the belt must be vigorous and "all out".

h. Escapes from Rear Body Hold.

(1) If *A* does not use wrestler's grip, *B* grabs one of *A's* fingers and bends it back.

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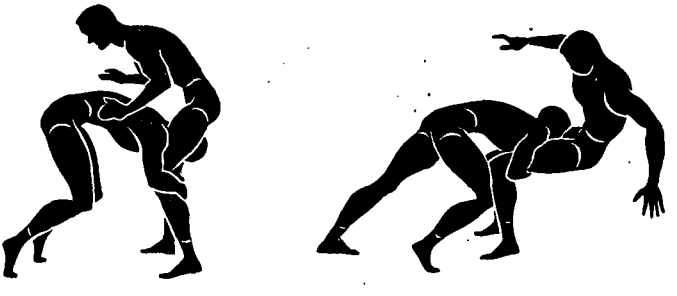
(2) If *A* uses wrestler's grip, *B* presses knuckle of second finger of either hand in the interspace between third and fourth fingers (metatarsals) on back of *A's* hand, about halfway between wrist and knuckle. This spot is very sensitive and if *B* presses hard with knuckle, *A* will usually let go.

(3) *B* bends forward, grabs one of *A's* ankles between *B's* legs, and lifts *A's* leg up to force *A* to the ground behind him.

(4) If *B* can secure a headlock on *A*, he can thrust his hips into *A's* waist and throw *A* to the ground.

i. Tackling an Opponent. If *B* is standing a little too straight and with legs too close together. *A* dives forward suddenly with head to outside of *B's* legs, grabs *B* with both arms around knees, draws knees toward him, pushes with



shoulders and throws *B* backward to the ground. This maneuver should not be attempted by *A* if he is more than arm's length from *B*.

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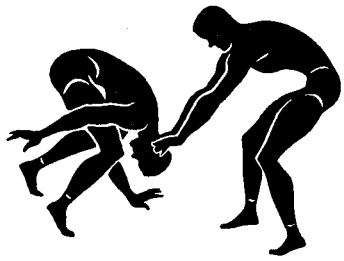
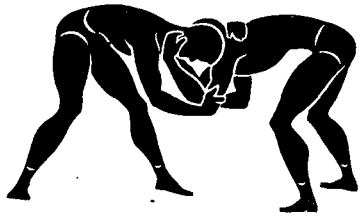
To block the tackle if *A* dives toward *B*, *B* jumps backward slightly. *B* places both hands on *A's* head or neck and forces *A's* head to the ground. It may be necessary for *B* to drop to one knee.



j. Double Outside Leg Hold. *A* and *B* stand locked in referee's hold. *A* steps backward, pulling *B* toward him. *A* then drops on both knees and drives head past *B's* right knee. *A* grabs both of *B's* legs and locks hands together. *A* then lifts *B* and swings *B's* legs to *A's* left, throwing *B* to the ground.



k. Head and Hip Lock, or Cross Buttock. *A* grabs *B's* right wrist with left hand and pulls *B* forward. At the same time *A* steps forward and to the

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left with right foot. *A's* right foot is outside of and parallel to *B's* right foot. *A* then places his right arm around *B's* head. Turning back to *B*, *A* pulls with left hand and right arm and throws *B* forward over his hip. *A's* knees are bent and his body is inclined forward. This maneuver is executed as one fast and continuous movement.

To block this, *B* pushes *A's* right hip as *A* starts to turn, thus keeping *A* away from him.

l. Tripping. From position of referee's hold or while grabbing *B's* arms, *A* presses *B* to one side. *A* then suddenly reverses the direction of his strain and kicks *B's* foot from under him, or *A* places foot outside *B's* foot, throwing *B* over his leg. (For example, if *A* is pressing *B* to *A's* right, *A* reverses the direction and presses *B* to the left. At the same time *A* trips *B* over *A's* left foot or *A*, using his left foot, kicks *B's* right foot out from under him.)

Section III. HAND-TO-HAND FIGHTING

98. GENERAL. Hand-to-hand combat activities are offensive and defensive maneuvers from wrestling, boxing, jiu-jitsu, and rough and tumble fighting. This type of activity, if well taught, is of interest to the soldier and is invaluable in developing a sense of confidence. Because many hand-to-hand activities are not strenuous other physical training activities should be scheduled during the same period.

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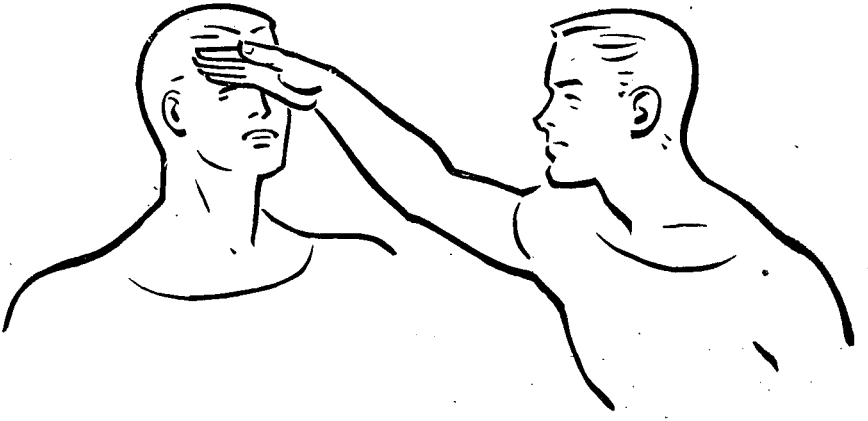
99. PRINCIPLES OF INSTRUCTION. a. There must be no attempt to cover a large amount of material in a short time. It is not so important that the soldier learn to recognize numerous offensive and defensive maneuvers, as it is that he completely master the ones he does learn.

b. Only maneuvers that will be highly effective against a violently resisting opponent in combat will be selected for presentation. The temptation to emphasize showy exhibition tricks that are of questionable effectiveness in combat will be avoided.

c. The potential skills of soldiers differ over a wide range. For this reason, only techniques that are simple enough to be mastered completely by all the men will be selected.

d. The techniques in paragraph 100 will be taught all units. All of them will be practiced until mastered. However, not more than three or four different techniques should be learned at one time. New methods of attack and defense will not be presented until those practiced have been mastered. After they have been mastered, they should be reviewed at least every three months. (For technique of instruction, see FM 21–150.)

100. TECHNIQUES. a. Blows with the side of hand. Where held off balance so that the mass of the body cannot be used to back up a blow, it is possible to strike a crippling blow with the little finger edge of the hand. The blow is struck with force and snap, with an attempt made to hit several inches *through* the objective, in a follow-through movement. Use the little finger side of the hand, at the joint between the bones of the palm and those of the fingers (knuckles). Blows may be struck, according to the opportunity afforded, at the following locations:



(1) At the saddle of the nose, striking toward the ears.

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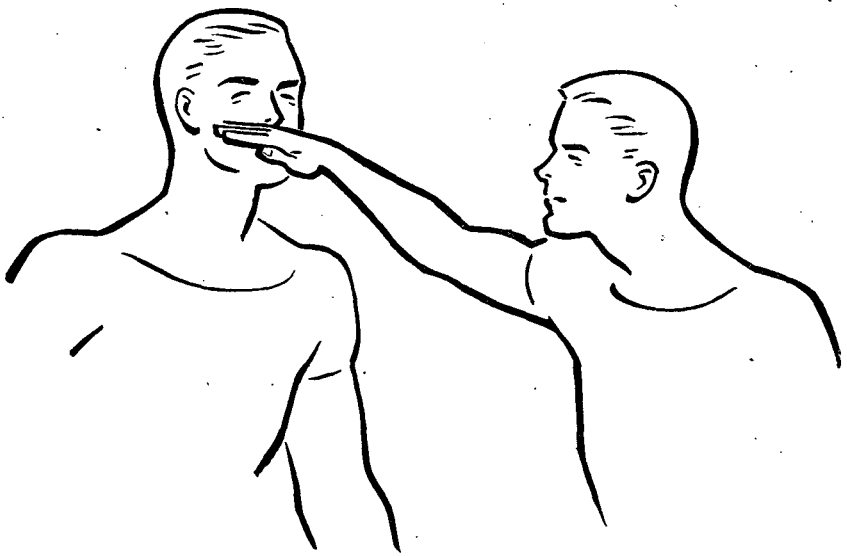
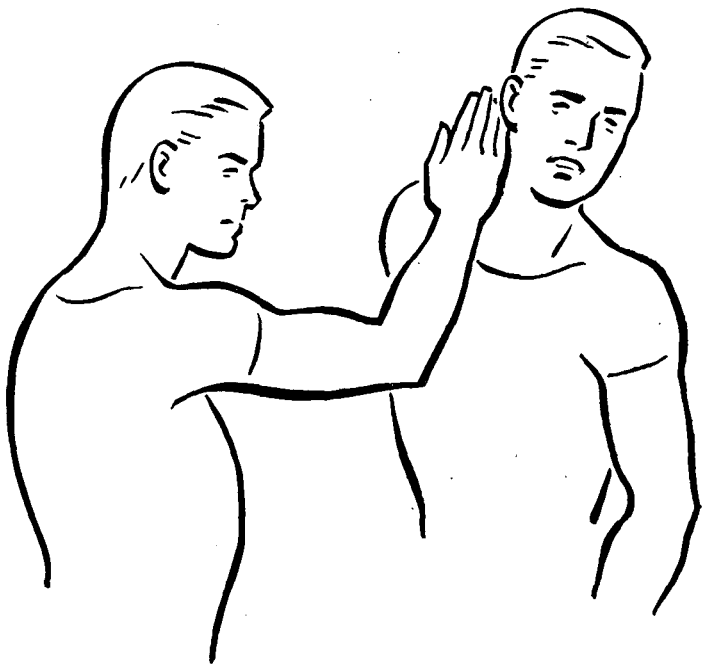


(2) At the base of the nose, striking upward toward the ears.



(3) At side of neck, just above the junction of the neck and shoulder.

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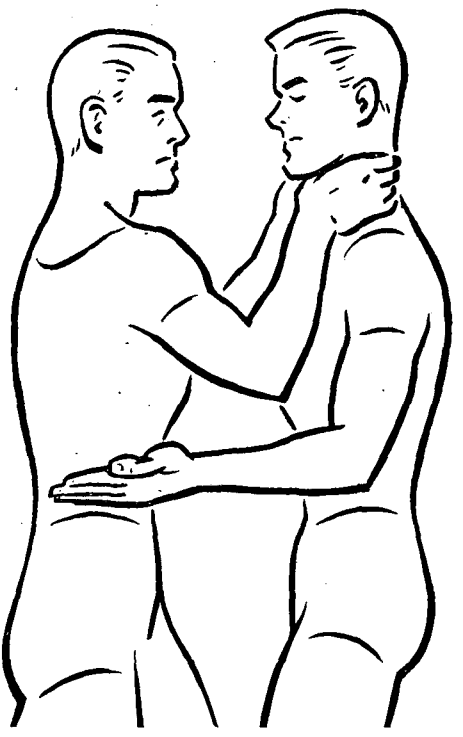
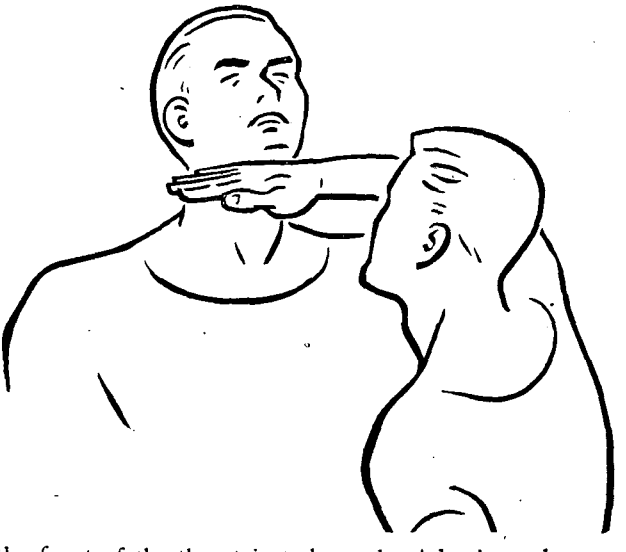


(4) Between lowest ribs and hip bone, just above the belt. This blow causes the opponent to relax any hold, as it usually knocks the wind out of him.



(5) At the front of the throat just above the Adam's apple.

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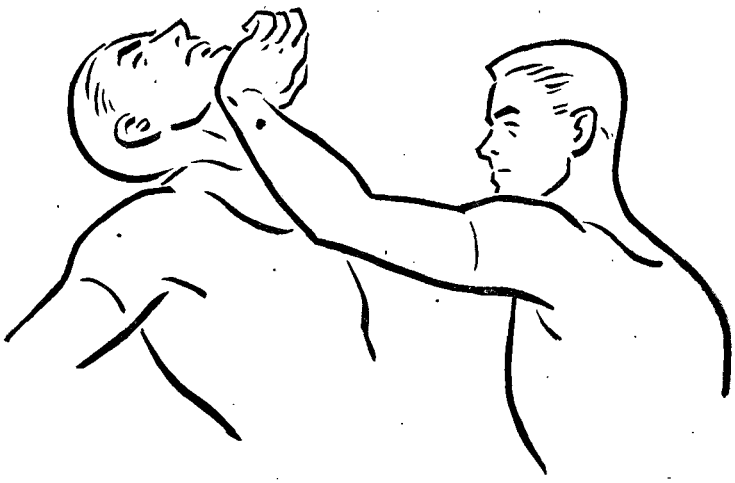
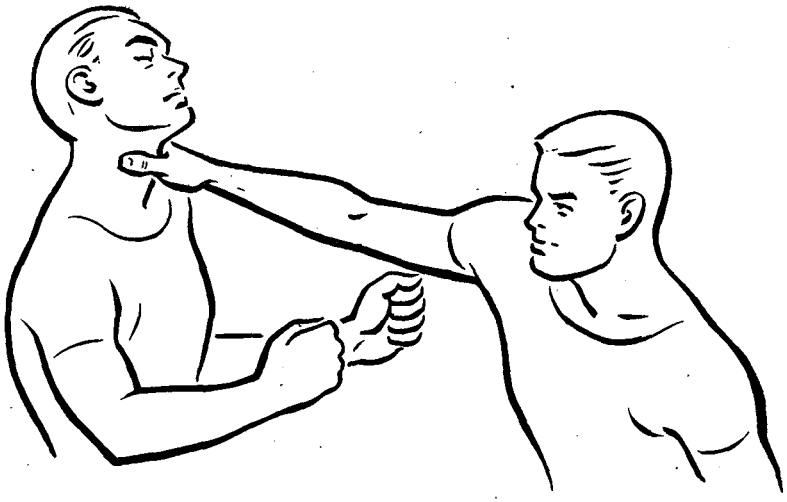
b. Blow with heel of hand. Where free movement is restricted, but where one arm is free strike forcefully *upward* with the heel of the hand if opponent's chin is slightly elevated. Follow blow with a strong push. This maneuver frequently results in an opportunity to use the knee to the groin. (See e *(3)* below.)



c. Cradle blow to throat. When caught with hands at the sides, close to an opponent who suddenly raises his fist to strike thrust the right arm diagonally upward striking opponent between chin and Adam's apple with thumb on one side and fingers on the other.



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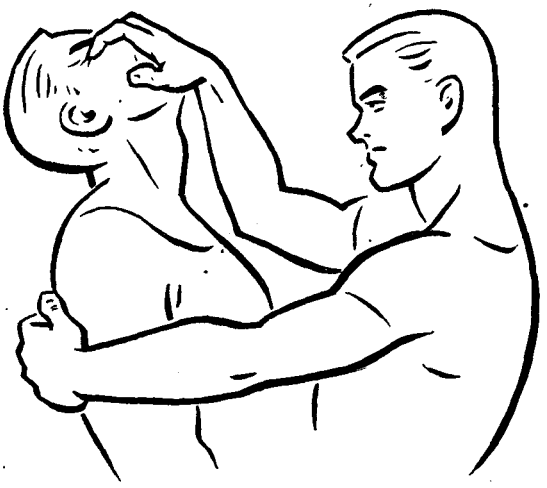
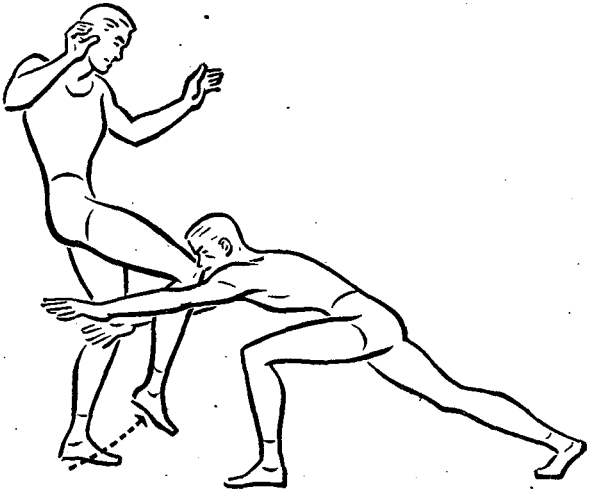
d. Fingers to eyes. Where one hand is free, and the opponent is attacking from the front with his head tipped downward push opponent's face upward and backward by placing first and second fingers in his eyes, with crotch of fingers beneath end of his nose. When used in actual combat, the push with the hand should be vicious and in a backward direction, to break the enemy's neck if possible.



e. Blows with knee. The knee can be used to incapacitate an opponent. It is usually used to the face, the solar plexus, or the groin.



(1) Knee to the face. Use blow as a counter to a flying tackle.

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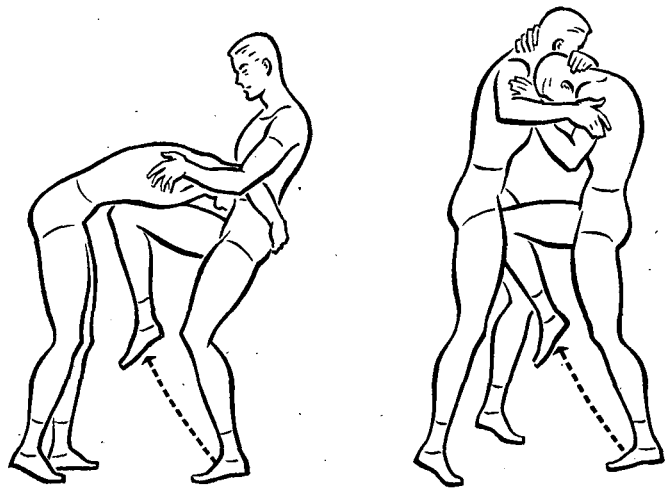
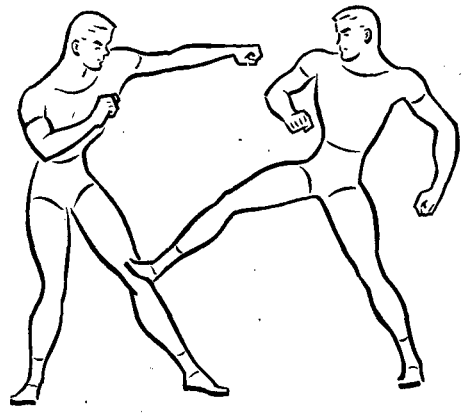
(2) Knee to solar plexus. If the opponent closes in and gets a waist hold, fall backward and bring the knee against his solar plexus.

(3) Knee to the groin. In close hand-to-hand fighting, the opponent is apt to leave many openings for a knee to the groin. Lose no opportunity to get in a blow.



f. Blows with the foot.



(1) Stamp to the knee. This is a violent *stamp* to the knee cap with either the inside or outside of the sole of the shoe.

(2) Kick to the shin. This should be a kick with the toe, not a stamp with the side of the foot.

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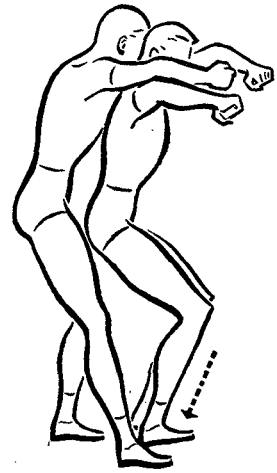
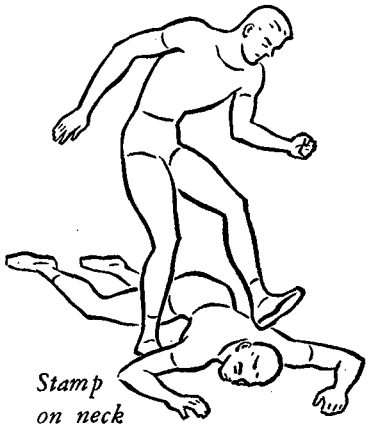
(3) Stamp to the instep. Use blow as defense when grasped from behind by opponent.

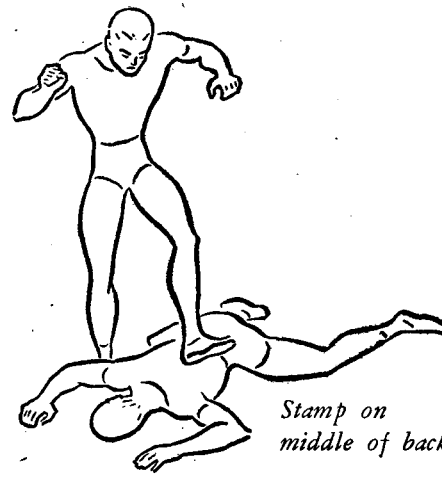


(4) Stamp or kick to back of knee. Use blow as defense in a shoulder (rear) take down. (See h*(1)* below.)

(5) Stamping or kicking prostrate opponent. The foot can be used to stamp on (with heel) or to kick (with toe) a prostrate opponent. The most effective places to stamp are the neck, the middle of the back, the base of the spine (opponent face downward) and the neck, solar plexus, and the groin (with opponent face up). The neck, chest and back are the most effective. The most effective places to kick are the neck, the armpit, the floating ribs, and the groin. The most dangerous is the neck. Stamping and kicking a prostrate enemy should be practiced on a dummy.



Stamp on neck



Stamp on middle of back

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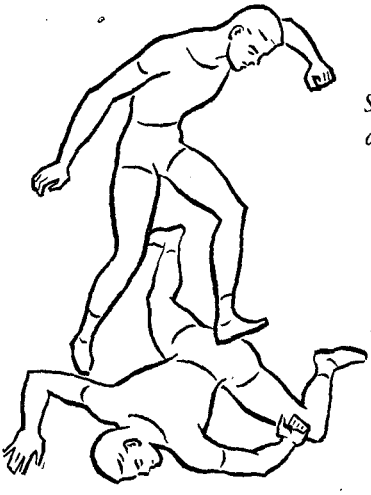
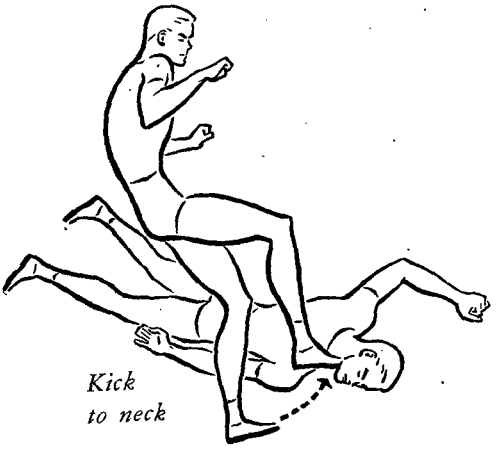
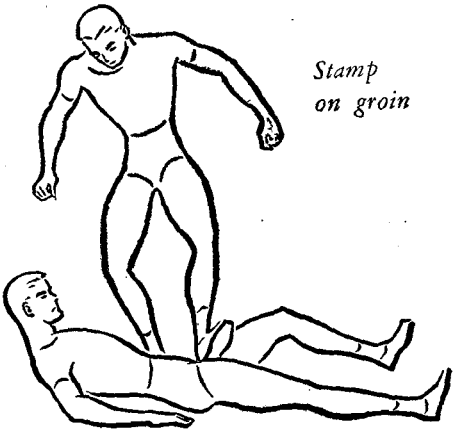


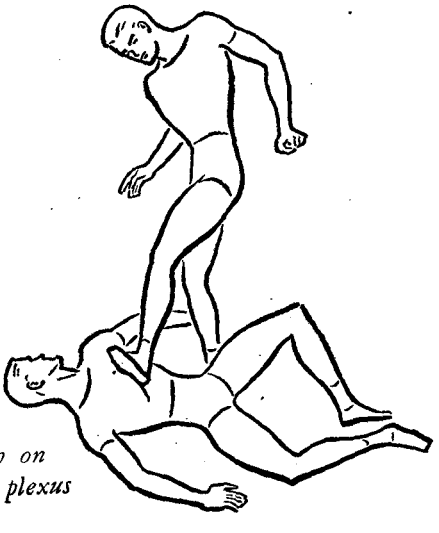
Stamp on base of spine



Kick to neck



Stamp on groin



Stamp on solar plexus

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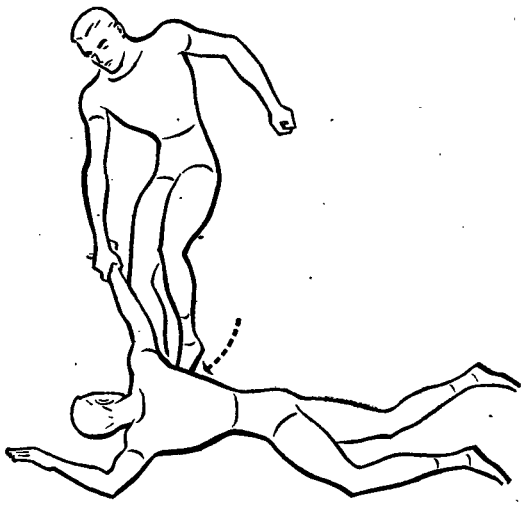
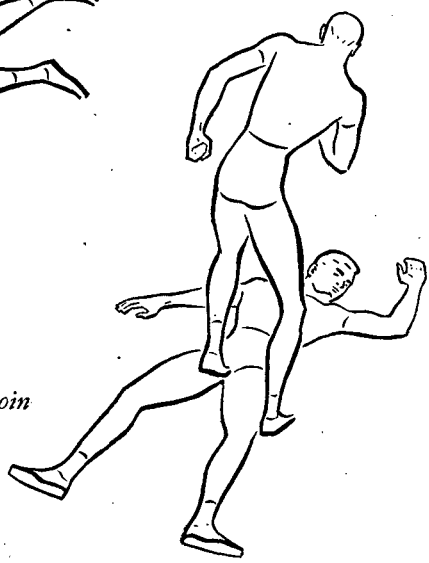
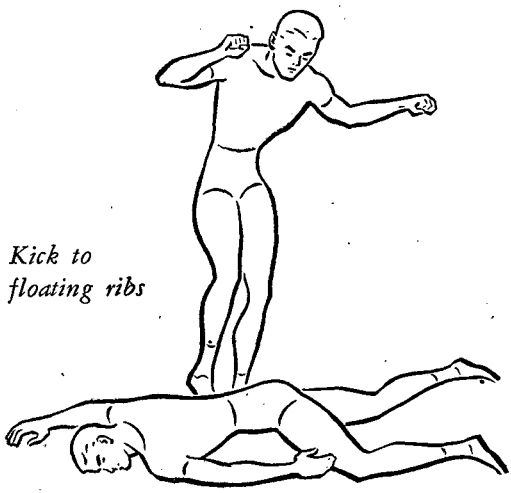


Kick to armpit



Kick to groin



Kick to floating ribs

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g. Counters for attack from the front. Since this is the most common form of attack, these counters should be well mastered.

(1) Low attack from the front. If opponent drives for hips, place hand against his right shoulder to slow his momentum. Slip right forearm under opponent's throat and grasp your left wrist. Apply pressure by lifting with

the right forearm. Hold opponent's head under right armpit. A variation of this hold is to grasp the little finger edge of your right hand with the left hand and pull back strongly.

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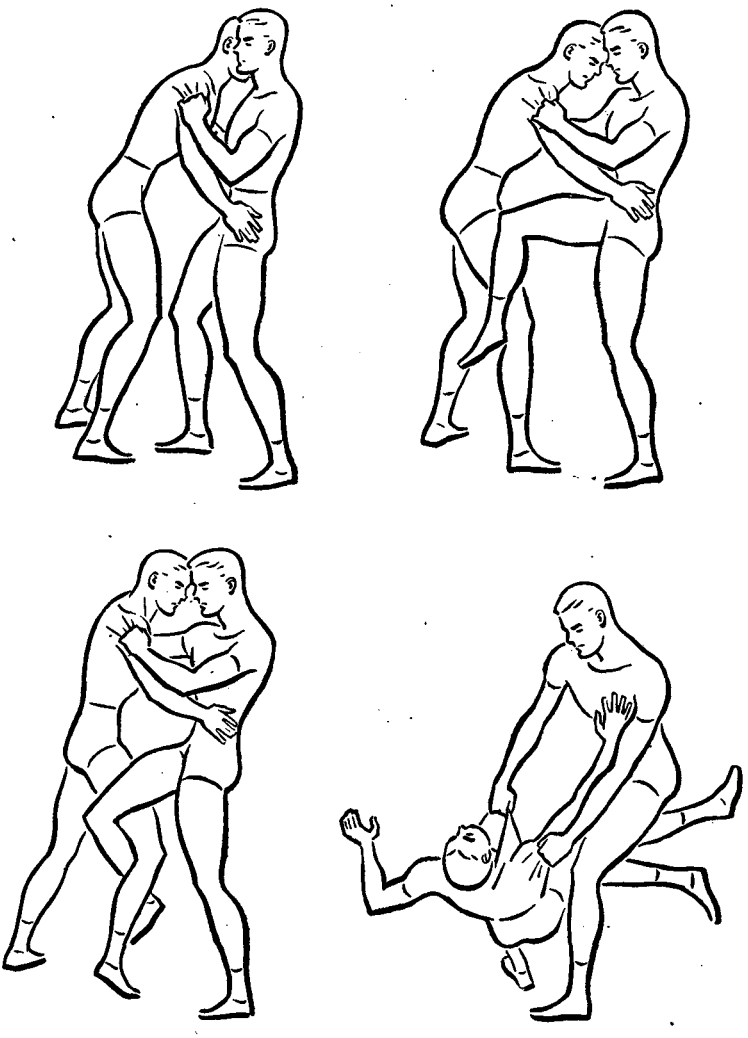
(2) Cross hock throw. As opponent approaches, grasp his shirt or jacket and maneuver him into placing his weight on his left foot. Then extend right leg to the outside of and behind opponent's right knee. Kick backward vigorously with calf of right leg striking back of opponent's right knee. At the same time pull opponent with left hand and push him with the right so that he is thrown on his right side to the ground.



(3) Flying tackle. The best defense against the flying tackle is to bring the knee up in violent contact with the face of the opponent. (See par. 100(e).)

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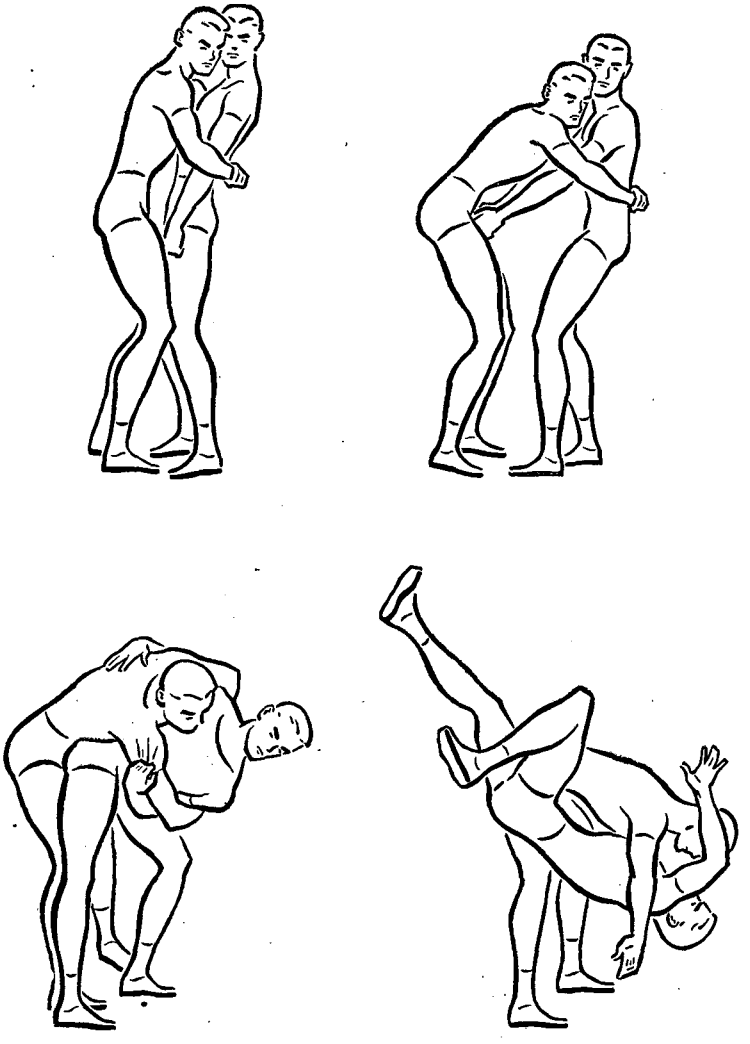
h. Counters for front overarm hold.

(1) Jab thumbs strongly into opponent's groin to force his hips backward. Then pivot on left foot and place right foot outside of, and pointing in same direction as, opponent's right foot. Slip right arm up under opponent's left



arm and with left hand grasp opponent's upper right arm. Then thrust hips vigorously into opponent's midsection. At same time lift with right arm and pull with left so that opponent is propelled over right hip to the ground.

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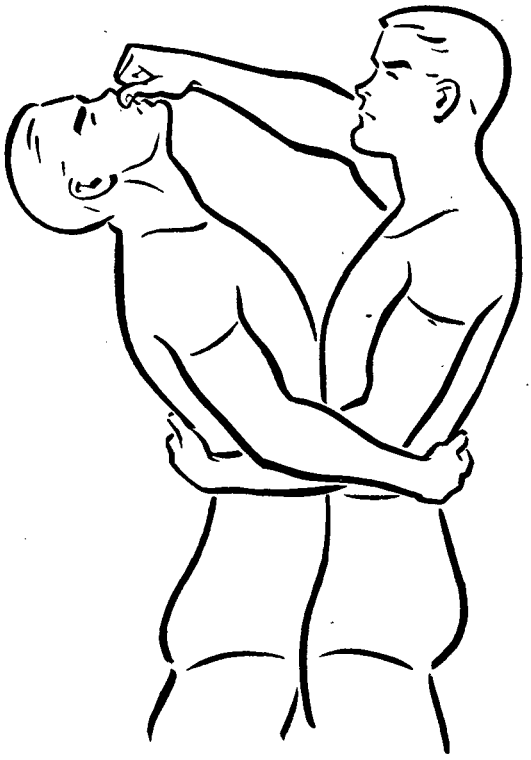
(2) Jab thumbs strongly into opponent's groin to force his hips backward. Follow with a violent blow with knee to his groin.

(3) If held tightly in an overarm bear hug by a powerful opponent who does not move back when thumbs are jabbed into his groin, squeeze his testicles hard.

i. Counters for bear hug under arms.

(1) Form a fist and place thumb underneath base of opponent's nose. Pressure on this tender spot will cause opponent either to pull his head backward or release his hold. Circle waist of opponent with other arm. Then push with thumb and pull in with the opposite arm which is around opponent's waist, until opponent is borne backwards.



(2) Press strongly upward and inward with the thumb underneath the ear lobes.

(3) Thrust fingers to eyes (See d above).

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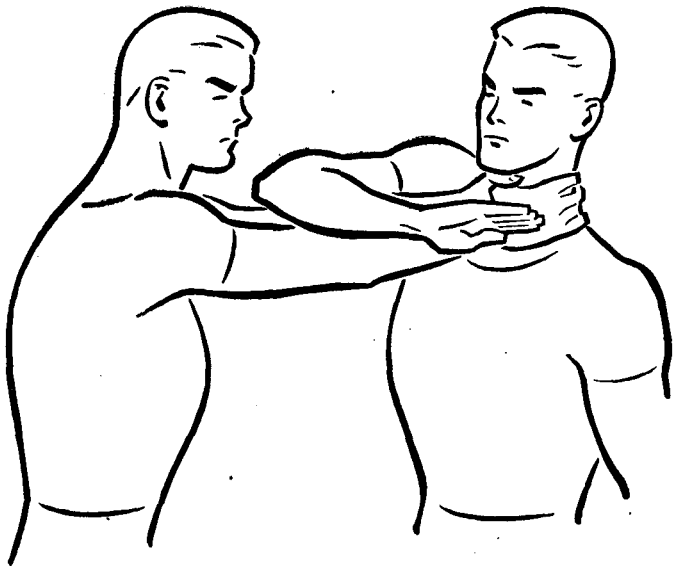
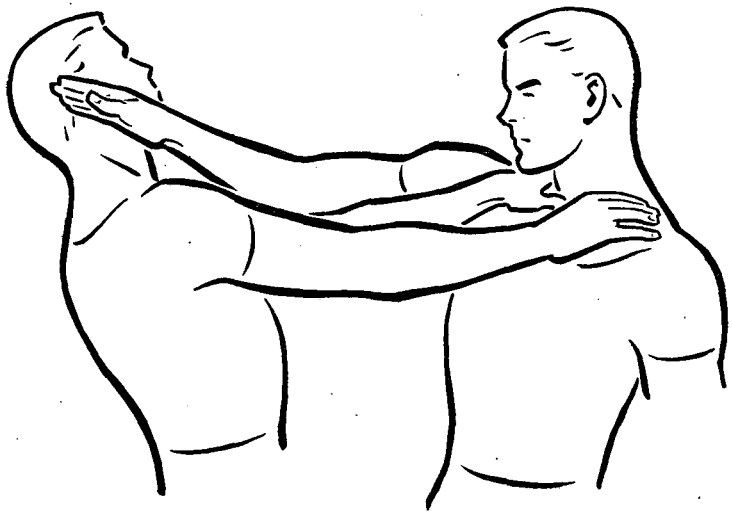
j. Counter for front choke. Step forward with right foot. Cross right arm with some force over opponent's arms, keeping palm of hand down. Then turn body to the right and strike the little finger edge of the hand (not the





little finger itself) against the right side of opponent's neck just below the jawbone. Strike blow with great force.

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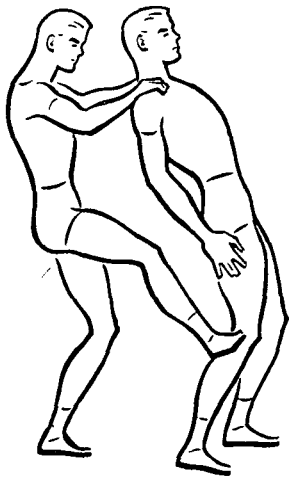
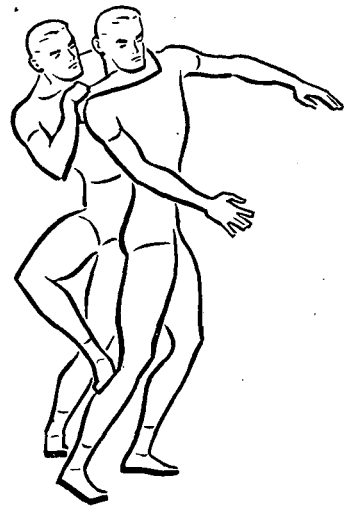
k. Attack from behind. The following attacks are usually used to surprise an enemy:

(1) Shoulder take down. Grab shoulders of opponent from the rear. Pull him backward and kick his knee forward. This attack leaves opponent on ground and vulnerable to foot attack.



Shoulder take down



Rear strangle with knee take down

(2) Rear strangle with knee take down.

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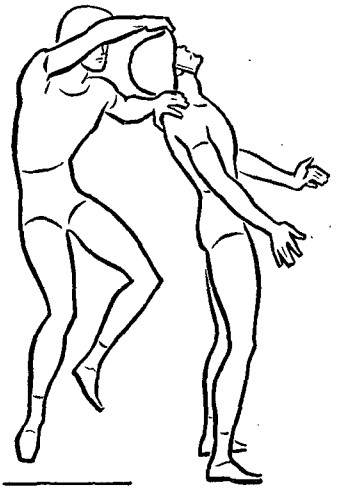
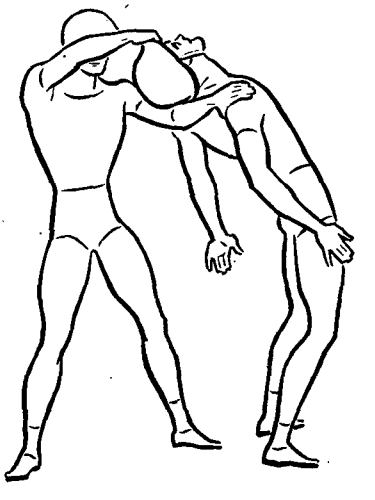
(3) Helmet neck break. (This method can be used *only* when attacker is sure opponent's helmet strap is fastened.) Spring up as high as is necessary to grasp front rim of opponent's helmet with right hand. At same time place left forearm against base of the back of his neck and place left hand on his right shoulder. Jerk the front rim of opponent's helmet upward, back-





ward, and then downward toward his back. At the same time press the left forearm forward. At the extreme of the downward pull, the left forearm acts as a fulcrum under back edge of helmet against which neck is to be broken.

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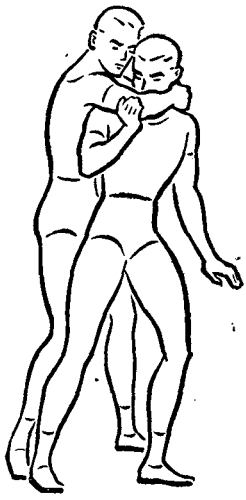
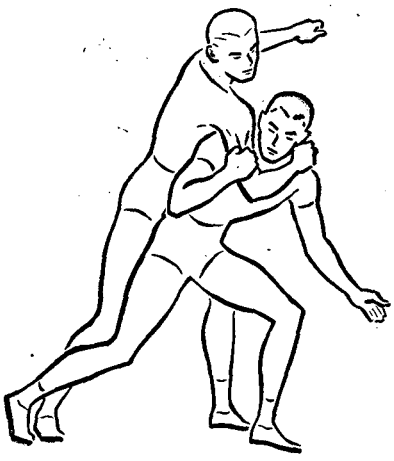
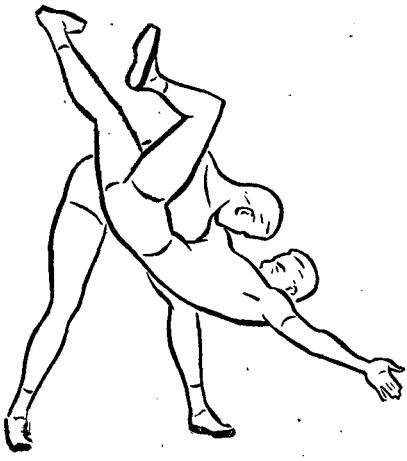
l. Counters for holds from the rear.

(1) Counter for one-arm strangle from rear. Place chin in crook of opponent's elbow and grasp back of his arm just above his elbow with hand on same side. (Grasp his *right* arm with your *right* hand.) Place the right foot outside of opponent's right foot. Thrust backward with hips against opponent's midsection, and retaining a firm grasp on opponent's upper arm, propel him over your head and shoulder to the ground.







(2) Counter for underarm bear hug from rear. Reach down with left hand, placing it just above opponent's left knee. Resting your weight in this manner, pivot left leg behind opponent's right leg. Then bring left hand

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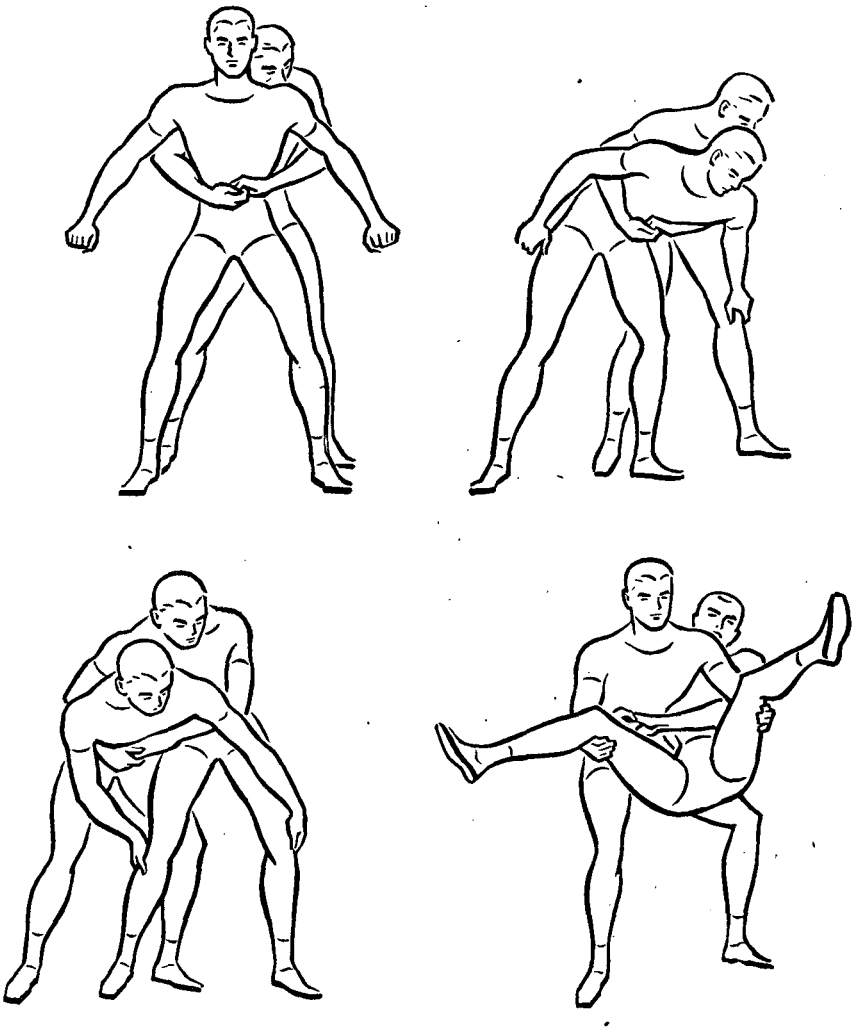
under opponent's left knee-joint and right hand under opponent's right knee-joint. By lifting and leaning backward, you can easily overbalance adversary over your left knee.



(3) Counter for underarm bear hug from rear. When opponent braces himself by placing one leg between your legs, bend forward swiftly from the waist and grasp his ankle. Keeping grasp on the ankle, straighten body causing opponent to release his hold and drop on his back. If opponent maintains his hold, fall backward on top of him, sitting on his midsection with great force. (See par. 97, h(3).)

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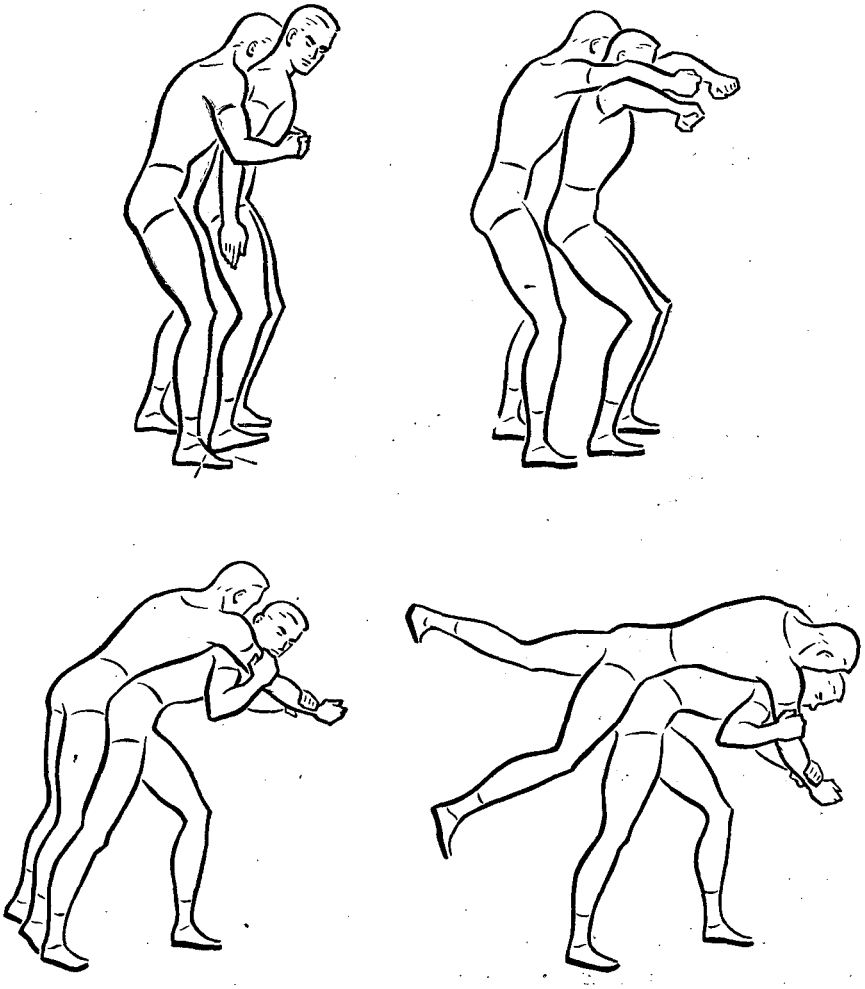
(4) Counter for overarm rear body hold. When grasped over the arms from rear, cause opponent to loosen hold momentarily by either stepping on his instep or kicking him in the shin with the heel. Then raise elbows high and lower body simultaneously by bending the knees. Reach up with right arm and grasp opponent's right upper arm just above the elbow. Also grasp



opponent's right wrist with your left hand. At same time move right foot outside of and in line with opponent's right foot and bending swiftly from the waist, throw opponent forward over your shoulder.

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Section IV. BOXING

101. VALUE OF BOXING. Boxing is one of the most valuable activities that can be included in the physical training program. This sport provides exceptional opportunities to develop strength, endurance, agility and coordination. The ability to box develops self-confidence and self-reliance. Boxing provides excellent training for bayonet fighting because nearly every block and blow has its counterpart in bayoneting. An outstanding value of boxing is that it provides an opportunity to practice self-control, resourcefulness, and cool, decisive thinking under situations of shock, violence, and physical punishment which simulate actual battle conditions.

102. BOXING IN PHYSICAL TRAINING PROGRAM. a. The most practicable way to include boxing in the physical training program is in the form of mass instruction. Such instruction can be carried on to a large extent without equipment. When the men have progressed to the point where actual competition is desirable, the available equipment should be pooled and organizations should alternate using it. To equip a company or platoon it may be necessary to pool all the equipment in a battalion or regiment.

b. When boxing instruction is included in the physical training program it should be scheduled for about 30 minutes, three times a week for 8 to 10 weeks. This period of time will suffice to teach all men the fundamental skills of this sport. The equipment will be available to more men if half the organization receives instruction on alternate days.

c. After all men have been taught to box, a tournament should be conducted. Such competition may be carried on during the physical training period, or in the off-duty hours. If it is carried on during the physical training period, the men who are scheduled to box a match are relieved from the regular physical training activity during that period.

103. CLASS ORGANIZATION. There are several formations which may be used for boxing instructions.The square or rectangular formation is readily adapted for this use (see par. 26). When this formation is employed for boxing instruction, the men should be extended twice to provide additional space. It is not necessary for the even-numbered men to uncover. To pair off the men, face about the odd numbers. Other formations which may be used are the circle, the half-circle, the double half-circle, the double circle, the V and the double V formations.

104. METHOD OF INSTRUCTION. First the teacher explains and demonstrates the skill to be covered and then the class members practice it in various drills. The drills may be any or all of the following types:

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a. Technique Drill. Each individual practices the skill by himself, usually upon command. The skill is divided into steps each of which is numbered so that the activity can be performed by command. When called, each number becomes the command of execution.

b. Hitting Drill. After acquiring the proper form the next step is to develop punching power. The class drills in pairs. One man executes a specific blow on command while his partner holds his gloved hand as a target. All blows can be practiced in this manner, either singly or in combination.

c. Blocking Drill. Once the proper execution of the blow has been learned and power has been developed through hitting drills, a drill designed to teach proper defense is necessary. Defense is best learned if the men work in pairs. On command, one man practices a slow lead blow, while his partner practices the block as explained and demonstrated by the instructor.

d. Defensive Boxing Drill. Such drills are used to develop defensive techniques under actual boxing conditions. One man of each pair defends himself as best he can, using defensive techniques best suited for his opponent's attack. His partner carries the attack as called for by the instructor.

e. Controlled Boxing Drills. These drills aid the development of specific technique, either offensive or defensive, and often both. It means actually limiting the offense to certain specified blows, narrowing attention and concentration, thus facilitating learning. It also requires a defense for the specified blows being practiced, thus aiding the development of a defensive technique.

105. FUNDAMENTAL TECHNIQUES.

a. On guard position. *(1)* From the position of attention, take a normal step forward with the left foot. Rotate the left foot inward about 25 degrees and the right toe outward approximately 30 degrees. Bend both knees slightly with the weight of the body almost equally divided on both feet. Raise the right heel about 2 inches off the floor. As the left foot and leg are turned inward, the body rotates to the right, presenting a narrow target to the opponent.

(2) Hold the left arm in a bent position with the left hand at the height of and about 8 to 10 inches in front of the left shoulder. The left elbow is held down in front of the short ribs. Turn the hand so that the thumb

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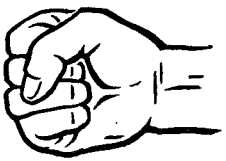
side is up and knuckles outward. Hold the right arm diagonally across the body with the right hand in front of the center of chest and slightly away from the body. The right elbow is directly in front of the short ribs. The palm faces left. The chin is dropped forward on the breastbone. The hands should be relaxed as much as possible and the fist should be tightened only at impact.

(3) To make a tight fist place the fingers in the center of the palm and close the thumbs over and across the first joints of the first two fingers so that the thumb side of the hand is perfectly flat.



b. Footwork. Footwork means moving the body so as to be in the best position for attack or defense. Any movement of the feet which tends to unbalance the body must be eliminated. There are four fundamental foot-movements advancing, retreating, circling left and circling right.

(1) Advancing. Driving off the right foot, slide the left foot forward the desired distance. Bring the right foot forward immediately so that the foot positions are essentially those of the fundamental stance. In short movements the feet are not lifted from the floor but are slid forward.

(2) Retreating. This movement is the reverse of the advance. Pushing off the left foot, slide the right foot backwards. Bring the left foot immediately backward so that the proper foot position is maintained.

(3) Circling left. Move the left foot six or eight inches to the left. Pivoting on the left foot the whole body is wheeled to the left until the correct position is taken.

(4) Circling right. Step six or eight inches to the right with the right foot and follow immediately with the left foot to the fundamental foot position.

c. Straight left to head. *(1)* The straight left to the head or left lead is the most common offensive blow. Extend the left arm vigorously from the on-guard position toward the chin of the opponent in a straight line, turn the body at the waist as the arm is extended, moving the left hip and shoulder toward the opponent with the arm; advance the left foot toward the opponent with a sliding movement simultaneously with the arm, throwing the body weight onto the ball of the left foot and into the punch, as the blow lands; the fist is clenched, with the palm down and the wrist straight as the blow is struck. Punching through instead of at the target gives added power to the

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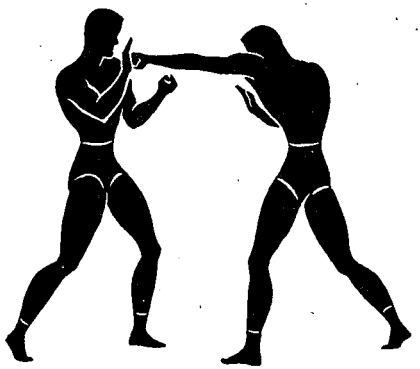
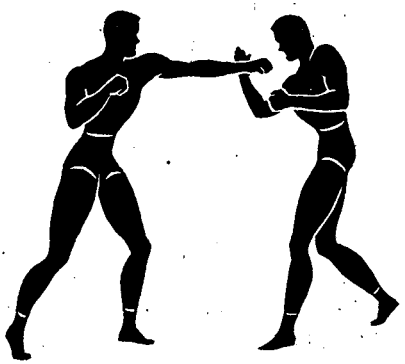
punch. The left jab is a variation of the straight left to the head being a light stinging blow used to keep an opponent off balance; the left shoulder does not move as far forward in the lead, the arm is not fully extended and the feet do not advance.



(2) A number of defenses may be used against the straight left or left jab to the chin:

(a) Blocking. Catch opponent's left lead in the palm of the open right glove, the back of which is slightly in front of the chin. Brace the blocking hand and forearm, elbow down close to the body. The blow should be caught on the lower part or butt of the hand. The movement must be kept close to the body at all times. Do not reach out to catch the opponent's blows as openings are created for a counterattack.

(b) Inside parry. As the opponent leads a left jab, drop slightly to the left, bringing the right hand to the inside of the incoming jab. Turn the palm of the right hand outward and brush the jab to the outside. It is important to take a quick short step to the left with the left foot and to bend the body slightly inside the left lead. The left hand should be ready to stop the opponent's right counter.



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(c) Outside parry. Force opponent's left lead across the body to the left with the right hand. The right hand should strike the opponent's lead on the cuff of the glove or on the wrist. This movement is mainly of the wrist and hand as an arm movement would be too slow.

(d) Slipping to the inside. As the opponent leads a left jab, shift the weight over the left leg thus moving the body slightly to the left and forward, and bring the right shoulder quickly forward. In so doing, the left jab slips over the right shoulder, the right hip rotates inward, and the right knee bends slightly.

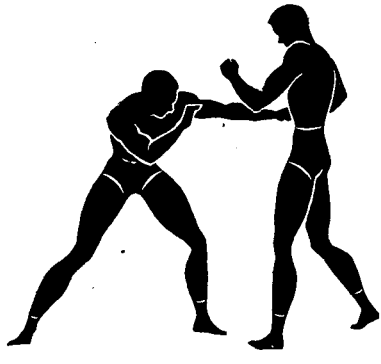
(e) Slipping to the outside. In slipping to the outside, drop the weight back to the straight right leg by quickly turning the left shoulder and body to the right. The right foot remains stationary, but the left toe pivots inward. The left jab will slip over the left shoulder.

(f) Cuffing. Knock the opponent's left lead downward by slapping with either the left or right glove. Elbows remain fixed. Slap the opponent's lead upward with either the right or left glove, using the back of the glove.

(g) Rear shift. As the opponent leads a left jab, step quickly to the rear.

(h) Snap away. As the opponent leads a left jab, shift the body weight quickly to the right leg and move back with the opponent's blow.

d. Straight left to body. *(1)* Step forward and extend left arm, wrist straight, palm down, to opponent's solar plexus. Lean out to right with the punch, so shoulders are on a level with left hand. Push off ball of right foot; guard face with right hand.



(2) The defenses for the straight left to the body are:

(a) Elbow block. As the opponent leads a straight left to the body, merely turn the body so as to take the blow on the elbow. Ordinarily it is best to intercept the blow on the right elbow, although the blow can be taken on the

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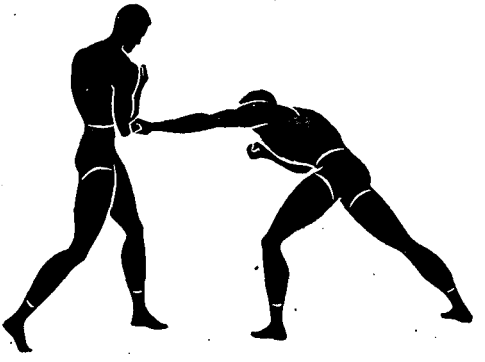
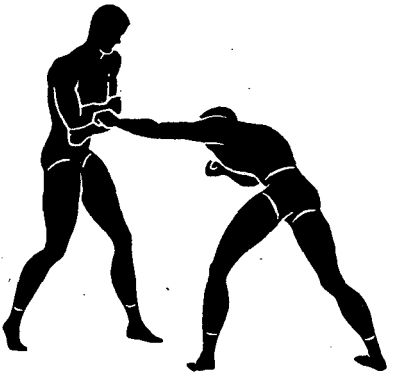
left elbow. The elbow should be held tight to the body, forearm straight, hand held high, and in position of guard.



(b) Forearm block. As the opponent leads a straight left to the body, fold both forearms across the abdomen, right arm above the left, so that solar plexus is completely covered.



(c) Parry. As the opponent leads a straight left to the body, drop the open right glove down and across the opponent's wrist thus brushing the blow outward. The right elbow remains fixed until contact is made with the opponent's lead, then the whole arm is straightened forcibly.

e. Left hook to the chin. *(1)* As the left hip and shoulder are turned to the right and the weight shifts to the right leg whip the left hand in an arc to opponent's chin. Drive through the target, not at it. Raise the elbow so that the forearm is on line with the hand. At the moment of impact the knuckles are pointing outward, palm inward with the thumb side of the hand

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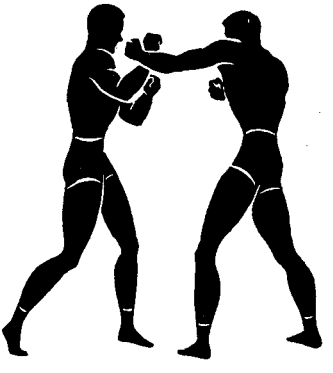
up. The arm remains in a right-angle position throughout the blow. Carry the right hand off the left shoulder, open, and in position of defense.

(2) The defenses for the left hook to the chin are:

(a) Forearm block. As the opponent leads a short left hook, raise the right arm as if to salute. The hand should be high and close, knuckles turned outward. The forearm must be straight in a firm, fixed position, elbow down. A slight turn to the left helps to dissipate the force of the blow.



(b) Ducking. As the opponent leads a left hook, drop underneath the blow by bending at the knees and waist, thus avoiding the blow. It is practically a straight drop. The hands should be carried high in the position of guard.

(c) Step back. Step back with the right foot, following immediately with the left.

f. Left hook to body. *(1)* Step toward opponent with left foot, keeping body in a slightly crouched position, and hook left hand to solar plexus or

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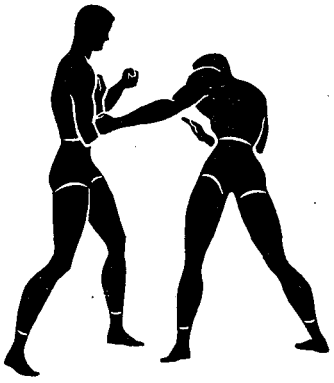
liver, pivoting on balls of feet as body shifts around to right. Drive left shoulder behind punch and guard face with right hand. The thumb is up on this blow.

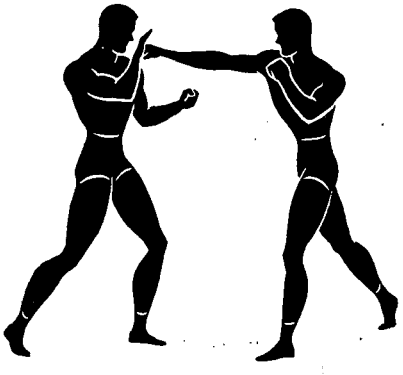


(2) Defenses for left hook to body are:

(a) Block the left hook to body with the elbow block. (See above.)

(b) Step back a few inches out of range.

g. Straight right to head. *(1)* The straight right to the head, being essentially a counterblow, or a blow used in combination with the left jab or left hook, is used only when openings appear and never as a lead. Step forward and slightly to the left with left foot. Punch straight to opponent's chin with right hand, driving right shoulder, behind punch and turning upper body to left. Push off ball of right foot at same time. The wrist is straight, palm down and thumb side of the hand turned inward. Try to punch out, straighten right leg, and turn shoulders to left at same time. Always punch from "on



guard" position in a straight line to target. The power from the blow comes from the twist of the waist, the shifting of the weight over the straight left

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leg, and the forceful arm extension. As the right arm is extended, the left arm is held close to the left side, hand high, forearm straight, elbow down.

(2) Several defenses are available for the straight right to chin.

(a) Leverage block. As the opponent leads a straight right drive the left hand for the tip of the opponent's right shoulder, then forcing to the left. This causes the arm to cross inside the opponent's lead deflecting it to the outside. The left arm must be completely straightened, elbow locked and palm turned outward.

(b) Block. The block for the right hand is the same as the block for the left. To stop a hard punch, catch blow in right palm, assisting with left shoulder, turn upper body right and back "riding" the blow.

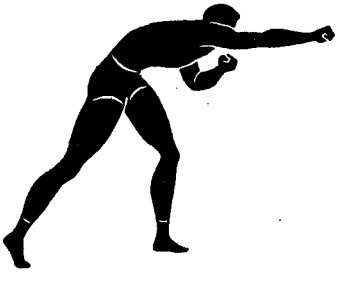
(c) Inside parry. As the opponent leads a straight right, shift slightly to the right at the same time turn palm of the left hand outward and parry or push the oncoming lead to the left. Carry the right hand high in position of guard.

(d) Outside parry. As the opponent leads a straight right, brush the oncoming lead to the right with the left hand. Step to the left and forward as this parry is performed. This parry is conducted in a manner similar to the parry of the straight left to the head with the right hand.

(e) Shoulder block. Turn the body to the right so as to catch the blow high on the left shoulder. Tilt the shoulder upward, by dropping the body weight back over the straight right leg. The left arm drops to a position covering the left side of the body. The right hand is carried open and directly off the left shoulder.

(f) Step back. Move back one step as the opponent leads a straight right.

h. Straight right to body. *(1)* Step toward opponent and slightly to left with left foot, punch with right hand and straighten right leg, turn shoulders to left at same time. Crouch somewhat to send punch straight out to target.



At the moment of impact the knuckles are up, thumb side of the fist turned inward. Drive right shoulder behind punch and turn upper body to left as blow is delivered. Keep left hand near chin.

(2) The defenses for the straight right to body are:

(a) Elbow block. Turn the body to the right and intercept the right lead

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on the left elbow. The elbow must be tight to the body, forearm straight, hand high and in front of the chin.

(b) Forearm block. As the opponent leads a straight right to the body, fold the forearms across the midsection, left arm under the right, completely covering the solar plexus.

(c) Brush away. Brush down and inward with the left hand, forcing the opponent's right lead to the left. The elbow remains fixed until contact is made, when the arm is straightened.

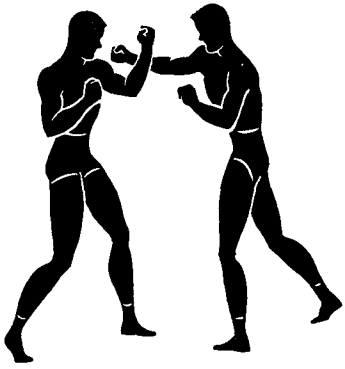
i. Right hook to the chin. *(1)* Shift the weight over the straight left leg, turn the right shoulder and hip to the left, raise the right elbow in a half

bent position, and whip it in an arc toward the left shoulder. At the moment of impact, the knuckles should be turned outward, thumb side of the hand up. The wrist must be kept straight.

(2) The defenses for the right hook to the chin are:

(a) Step back. As the opponent hooks a right to the chin, step back with the right foot and follow it with the left foot.

(b) Duck. Dip both knees and drop straight down. Carry the hands high.



(c) Forearm block. Raise the left hand as if to salute. The arm must be in a firm and fixed position.

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(d) Stop. The stop is a defensive technique which stops a hook before it can start. As the opponent delivers a right hook, step straight forward, driving the butt of the left hand to the opponent's right shoulder inside the right hook. The arm must be straightened and locked at the moment of contact.

j. Right uppercut to the body. *(1)* Drop the body directly sideways to the right. The right forearm is in a half-bent position, parallel to the floor, palm up. As the body is rotated to the left and straightened, drive the right uppercut to the solar plexus of the opponent. The left arm covers the left side of the body and face throughout.

(2) The defenses against the right uppercut to the body are:

(a) Brush away. Drop the left glove, palm open, forward and inward crossing the incoming blow from the inside forcing it outward to the left.

(b) Forearm block. On a right uppercut to the body, drop the left forearm forcibly downward, striking the oncoming blow from the inside and forcing it outward. Power should be used. If possible, the left forearm should be placed in the crook of the opponent's right arm.

(c) Step back. On the right uppercut to the body take one complete step to the rear. This will move the body out of range ready for either attack or defense.

k. Combination Blows. Boxing blows are most effective when delivered in a well planned series. Such a sequence is known as combination blows. As each blow is delivered additional openings are created until finally the desired setup is obtained. Any combination of blows may be used as long as the final opening results. Each boxer should develop combinations effective for himself. Some of the best combinations are as follows:

(1) Double left jab to the chin.
(2) Left jab to chin, left jab to body.
(3) Left jab to body, left jab to chin.
(4) The double left jab to the body.
(5) Left jab to body, left hook to chin.

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(6) Left jab to chin, hook to chin.
(7) Left jab to chin, left jab to body, left hook to chin.
(8) Left hook to chin, left hook to body.
(9) Left jab to chin, left hook to chin, left hook to body.
(10) Left jab to chin, straight right to chin.
(11) Left jab to chin, straight right to chin, left hook to chin.
(12) Left jab to chin, left hook to chin, straight right to chin.
(13) Left jab to chin, straight right to body.
(14) Left hook to chin, right hook to chin.
(15) Left jab to chin, left hook to chin, right hook to chin.
(16) Left jab to body, right hook to chin.
(17) Left hook to body, right hook to chin.
(18) Left jab to chin, straight right to body.
(19) Left jab to body, straight right to body.
(20) Left jab to chin, right uppercut to body.

l. Countering. A counter is a method of using an opponent's offense as a means of successfully completing one's own attack. A wide variety of counters is available for each lead of the opponent. The counter which is employed will depend upon the lead of the opponent and the method used to avoid it.

(1) Counters for straight left to chin.
  (a) Return jab.
  (b) Inside parry and left jab to chin.
  (c) Outside parry and left jab to chin.
  (d) Right cross.
  (e) Outside parry and left hook to body.
  (f) Inside right to chin.
(2) Counter for straight left to body.
  Straight left to chin.
(3) Counters for left hook to chin.
  (a) Left jab to chin.
  (b) Straight right to chin.
  (c) Return left hook to chin.
  (d) Duck and left hook to body.
(4) Counters for left hook to body.
  (a) Left jab to chin.
  (b) Straight right to chin.
  (c) Right hook to chin.
(5) Counters for straight right to chin.
  (a) Left straight to chin.
  (b) Inside parry and right uppercut to body.
  (c) Outside parry and right hook to chin.
  (d) Straight right to body.

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(6) Counters for straight right to body.
  (a) Left straight to chin.
  (b) Left hook to chin.
  (c) Left hook to body.
(7) Counters for right hook to chin.
  (a) Left straight to chin.
  (b) Straight right to body.
  (c) Left hook to body.
(8) Counters for right uppercut to body.
  (a) Left jab to chin.
  (b) Left hook to chin.

m. Feinting. Feinting is the art of using the body to feign attack at one point, and then to attack at another. It involves the use of footwork, the knees, hands, eyes, arms, and trunk. Feints against the unskilled are not as necessary as against the skilled. Combination of feints should be practiced until they are natural movements.

106. TEACHING SEQUENCE. a. The recommended teaching sequence in boxing is as follows:

(1) Left hand blows.
  (a) Straight blows to head and body and defenses.
  (b) Hooks and uppercuts to head and body and defenses.
(2) Right hand blows.
  (a) Straight blows to head and body and defenses.
  (b) Hooks and uppercuts to head and body and defenses.
(3) Fundamental counters.
  (a) Straight left counters.
  (b) Left hook and uppercut counters.
  (c) Straight right counters.
  (d) Right hook and uppercut counters.
(4) Combination blows.

In the above sequence, the complete use of the left hand is taught before the right hand is developed at all. The greatest hindrance to the development of boxing skill is discovering right-hand hitting power before learning the proper use of the left hand. If the left hand is developed before the right hand is brought into use, a highly developed pattern of skill results which will always make the use of the left hand primary to that of the right hand.

b. A series of 24 lesson outlines for use in boxing instruction follows:

LESSON 1.

Stance.
Footwork.
Straight left to chin.

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LESSON 2.

Review Lesson No. 1.
Defenses for straight left to chin.

LESSON 3.

Review straight left to chin and defenses.
Additional defenses for straight left to chin.

LESSON 4.

Review straight left to chin and defenses.
Straight left to body.
Defense for straight left to body.

LESSON 5.

Review straight left to chin, body, and defenses.
Combination blows with straight left.
Actual boxing using only straight left-hand blows.

LESSON 6.

Review straight left defenses, and combinations.
Left hook to chin.
Defenses for left hook to chin.
Actual boxing, using only straight left-hand blows.

LESSON 7.

Review straight left, left hook to chin, and defenses.
Left hook to body.
Defenses for left hook to body.
Actual boxing, using all left-hand blows.

LESSON 8.

Review left-hand blows and defenses.
Combinations with left-hand blows.
Actual boxing, using all left-hand blows and combinations.

LESSON 9.

Review left-hand blows, defenses, and combinations.
Counters for straight left, hook, and uppercut.
Actual boxing, using all left-hand blows, counters, and combinations.

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LESSON 10.

Review left-hand blows, defenses, counters, and combinations.
Actual boxing, using all blows taught.

LESSON 11.

Review left-hand blows and defenses.
Straight right to chin.
Defenses for straight right to chin.
Actual boxing, using all left-hand blows taught.

LESSON 12.

Review straight right to chin and defenses.
Straight right to body.
Defenses for straight right to body.
Actual boxing, using all blows taught.

LESSON 13.

Review straight right to chin, body, and defenses.
Combination blows with left and straight right punches.
Actual boxing, using all blows taught.

LESSON 14.

Review straight right-hand blows and defenses.
Counter blows against straight right blows.
Actual boxing, using all blows taught.

LESSON 15.

Review straight right-hand blows and defenses.
Right hook to chin.
Defenses against right hook to chin.
Actual boxing, using all blows except right hooks.

LESSON 16.

Review right hook to chin and defenses.
Right uppercut to body.
Defenses for right uppercut to body.
Actual boxing using all blows taught.

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LESSON 17.

Review right hook, uppercut, and defenses.
Combination blows.
Actual boxing using all blows.

LESSON 18.

Review left and right blows and defenses.
Combination blows.
Actual boxing using all blows.

LESSON 19.

Review left and right-hand blows and defenses.
Combination blows.
Actual boxing.

LESSON 20.

Review left and right-hand blows and defenses.
Combination blows.
Actual boxing.

LESSON 21.

Review left and right-hand blows and defenses.
Combination blows.
Counter blows.
Actual boxing.

LESSON 22.

Review left and right-hand blows and defenses
Combination blows.
Counter blows.
Actual boxing.

LESSON 23.

Review counter and combination blows.
Actual boxing.

LESSON 24.

Review counter and combination blows.
Actual boxing.

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CHAPTER 14

TUMBLING

Section I. GENERAL

107. TUMBLING IN PHYSICAL TRAINING PROGRAM. a. Tumbling is an excellent activity for developing strength, agility, precision, and balance. It is a self-testing activity which is popular with soldiers and develops valuable military skills.

b. When possible, regulation mats should be used. Even if mats are not available, most tumbling activities can still be done on various types of surfaces. Soft turf, or a sawdust pit is most satisfactory. Tumbling should never be done on a hard surface by beginners.

c. The best plan for organizing tumbling is to divide the group into several small sections, each comprising not more than six or eight men. Competent assistants should be selected from the group to be in charge of these small sections. The instructor should move about giving constructive criticism. When the number of mats are limited the various groups should alternate using those which are available.

d. In more advanced tumbling "spotters" should be used during the learning period. When practicing somersaults or other aerial stunts, beginners should wear a tumbling belt with ropes at the sides, held by two assistants. To aid the learning of simpler stunts, a roll of mats may be placed for protection, and the spotter may lift at the proper time or steady the legs of a man learning a balancing stunt.

Section II. SINGLE TUMBLING

108. GENERAL. Single tumbling is not only an excellent conditioning exercise, but also trains the individual in body control for many situations involving unusual positions such as rolling falls and parachute jumps. The performers should attempt to progress only as fast as they can master the stunts reasonably well.

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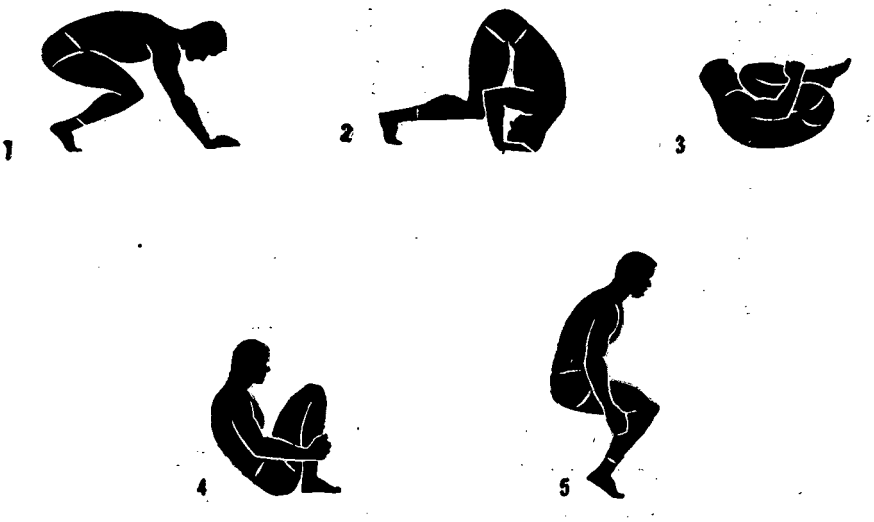
109. SINGLE TUMBLING STUNTS.

STUNT 1: FORWARD ROLL

Starting Position. Full-knee bend, hands on mat in front of feet.
Movement. Place weight on hands and bend head forward, chin to chest. Roll forward on back of neck and shoulders. Grasp knees and continue to roll forward in "tuck" position. Rise to standing position.

Several rolls may be done in succession, in which case do not rise to feet between rolls but remain in a "semituck" position until the last roll of the series. The forward roll may also be done with one foot ahead, without use of hands, with knees stiff, and body in "pike" position.



STUNT 2: SQUAT STAND

Starting Position. Full-knee bend, arms inside knees, hands on mat, fingers pointing forward.
Movement. Lean forward, bend elbows outward and rest knees on elbows. Raise feet off mat and balance on hands only.

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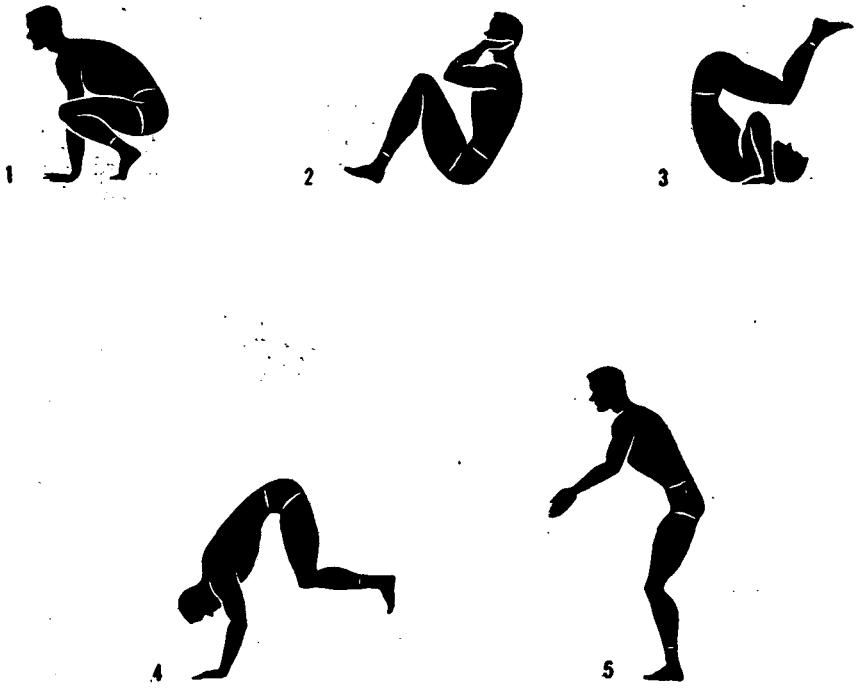
STUNT 3: BACKWARD ROLL

Starting Position. Squatting position.
Movement. Roll backward. As soon as hips are on the mat, place hands on mat on either side of head, fingers pointed towards hips, and roll rapidly over backward maintaining a "tuck" position. Push hard with hands, roll over to feet, and rise to a standing position. It is important to keep the chin on the chest during this roll.



This stunt may also be started from a stand, with knees straight. In this case, when starting to fall backward, bend forward sharply from hips and, just before hips strike the mat, straighten briskly upward. As soon as hips strike the mat, continue the roll as described above.

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STUNT 4: LONG DIVE

Starting Position. Standing.
Movement. Run forward and spring from both feet, diving forward with hips higher than head. Keep head and shoulders up until hands touch the mat. Then "tuck", roll forward over shoulders and back, and grasp knees as in forward roll. Much of the shock of landing is taken up by the arms and hands. Rise to feet.

This stunt is simply a forward roll preceded by a dive. As a beginner, progress slowly and at first dive only 2 or 3 feet without running. Gradually increase the speed of the run and the distance of the dive.

STUNT 5: HIGH DIVE

Starting Position. Standing.
Movement. Run forward and jump from both feet, diving forward and upward, and keeping head and shoulders higher than feet until the required height is reached. Then bend forward, diving head first downward toward the mat. When hands touch mat, put full weight momentarily on arms. Then "tuck" and roll as in the forward roll or long dive. Rise to feet. In the beginning this stunt is like a forward roll, except that the spring is slightly upward rather than straight forward.

When this dive is being practiced, one man may kneel or stand with an arm out-thrust for the other men to dive over. This man can thus readily vary the height desired by the performers.

STUNT 6: HEAD STAND

Starting Position. Body and legs in crouch position. Hands on mat, shoulder-width apart; fingers pointing straight ahead.
Movement. Place head at hairline on mat 15 inches in front of hands. Kick upward with rear foot, pushing with hands. Slowly, bring both feet together to the perpendicular position. Keep toes pointed and back arched. Most of the weight is borne on the head. The hands bear some of the weight, but are used primarily to maintain balance.

In the beginning it is easier to hold the position with the legs dropping down slightly and with the knees slightly bent.

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STUNT 7: FOREARM HEADSTAND

Starting Position. Kneeling with both elbows and the backs of the forearms on the mat. The hands are extended in front so that the forearms form an angle of about 60°. Both palms are up and the back of one hand rests in the palm of the other hand.

Movement. Place forehead in the palm of the upper hand and swing up to a headstand as in Stunt No. 6.

Since the base of this headstand is smaller, more care is necessary to get the center of gravity within the triangle.

STUNT 8: ELBOW STAND

Starting Position. Kneeling with forearms on mat and palms of hands down and slightly separated.

Movement. Swing legs up until body and legs are vertical above forearms.

This is much like Stunt No. 7 except that the head is not touching the mat.

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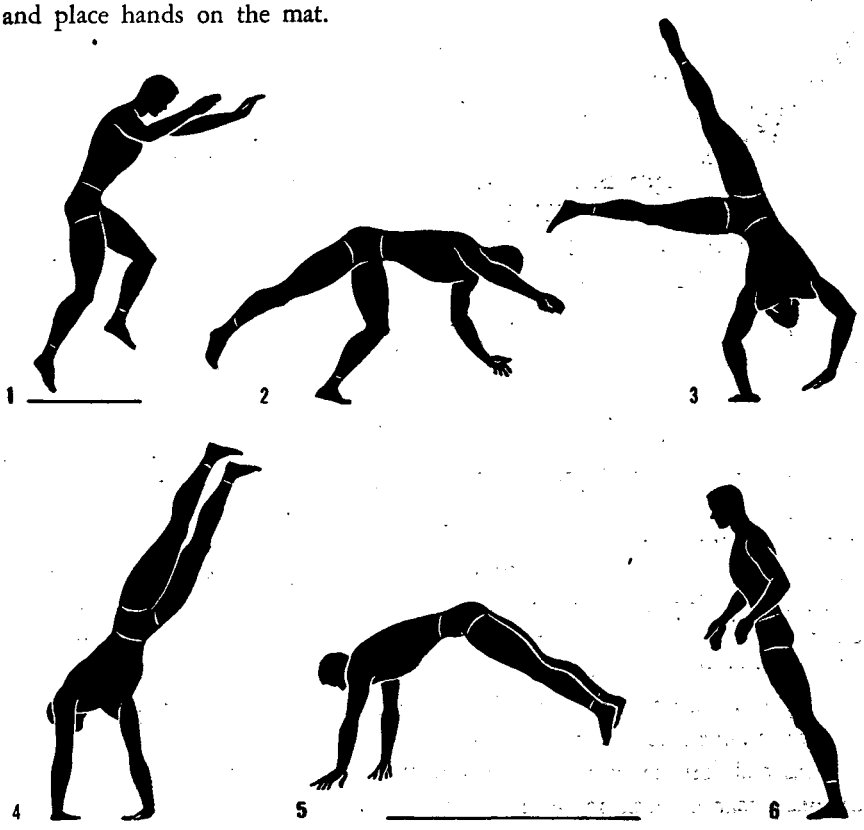
STUNT 9: ROUND-OFF

Starting Position. Standing.

Movement. Run forward and execute a "skip step" with left foot forward. At the same time swing arms upward. Then put both hands downward to the mat, with right hand 8 to 10 inches in front of left hand. At the same time kick upward with right or rear leg, following this immediately with left leg. Swing both feet vertically over head, and rotate body a half turn to the left. Then push off with hands and snap feet down to the mat, facing the starting position. Finish with a jump upward.

This stunt may be done with either foot forward. The "skip step" (left foot forward) is a preliminary to many tumbling stunts that begin with a run in which the performer takes off on one foot. This stunt is performed with the "skip step" as follows: Walk or run forward several steps. Then as right foot strikes the mat, make a short, low hop, or skip, on right foot. At the same time raise left leg somewhat forward, and swing arms forward, and upward. Immediately after the right foot lands from the hop, bring left foot down about 3 feet in front of the right. Bend body forward, swing arms downward and place hands on the mat.



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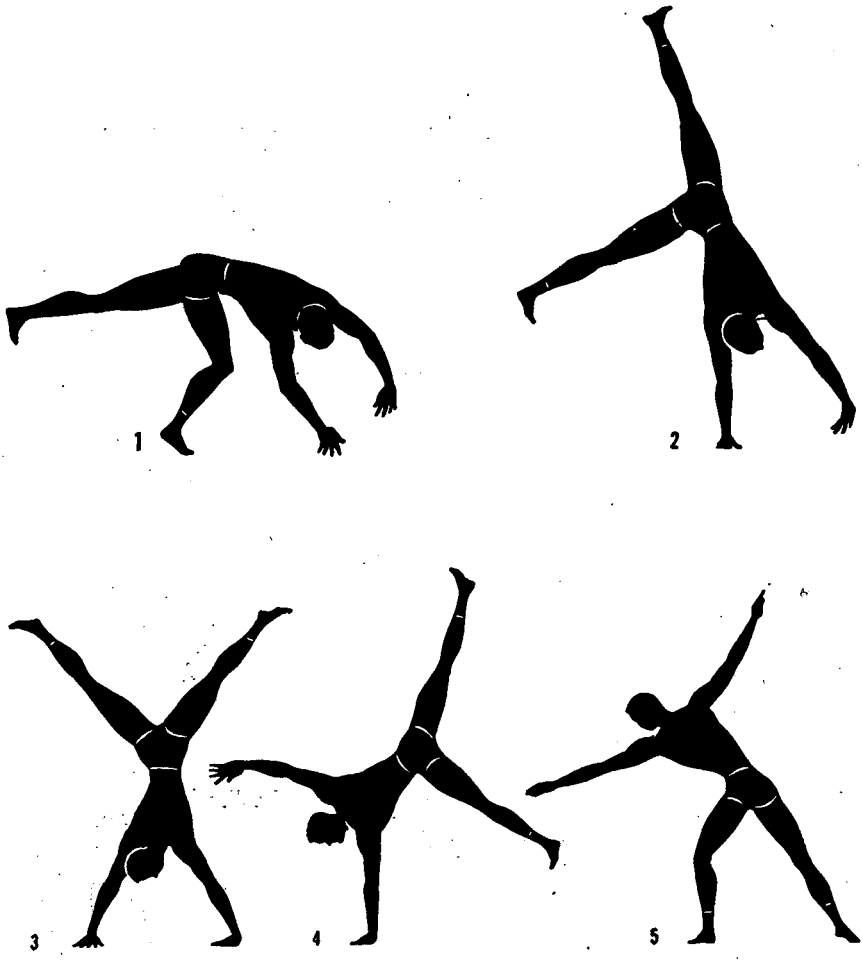

STUNT 10: CARTWHEEL

Starting Position. Standing.

Movement. Keeping right side towards direction of movements, feet spread, and arms extended sideward, lean body to left. Then rock to right swinging right hand down sharply to mat (near right foot) and kicking left leg upward. Follow immediately with right leg. Spread legs pass through a vertical plane. First the right hand, then the left hand and left foot, and then the right foot land on the mat in turn.

Hands and feet are evenly spaced like the four spokes of a wheel. Several cartwheels may be done in succession and to either side.

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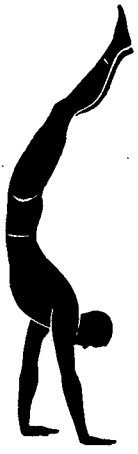

STUNT 11: HAND WALK

Starting Position. Hands on mat, shoulder-width apart; fingers slightly spread and pointing forward; body and feet in crouch position.

Movement. Kick rear foot upward. Follow with other foot until both are vertical. Keep back arched, knees straight, and toes pointed and together. Overbalance slightly forward and take short steps forward on hands. Keep head up and look forward at the mat.

STUNT 12: BACKWARD ROLL TO HEAD STAND

Starting Position. Full knee-bend.

Movement. Roll backward with arms straight and slightly separated and extended backward on the mat. Instead of holding the "tuck" position as in the backward roll, thrust feet vigorously upward to a vertical position. At the same time place hands on the mat, fingers pointed toward head, and come to the position of head stand.

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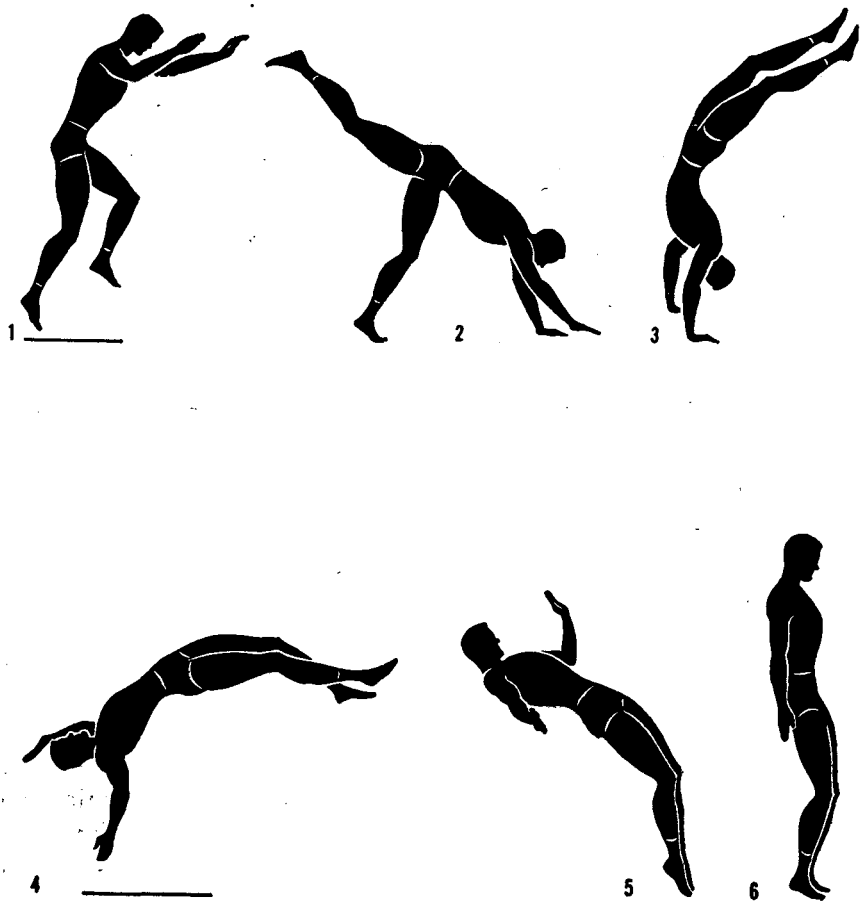

STUNT 13: FORWARD HAND SPRING

Starting Position. Standing.

Movement. Run forward executing a skip step. At the same time swing arms upward and raise forward leg. Then bend trunk forward and put hands to the mat. At the same time kick backward leg upward hard and follow immediately with forward leg. Elbows are very slightly bent. When hips reach a point about 6 inches in front of hands, push up hard with hands, arch back, and land on feet. If there is a tendency to fall backward, bend forward at hips and bend knees just as feet touch the mat.

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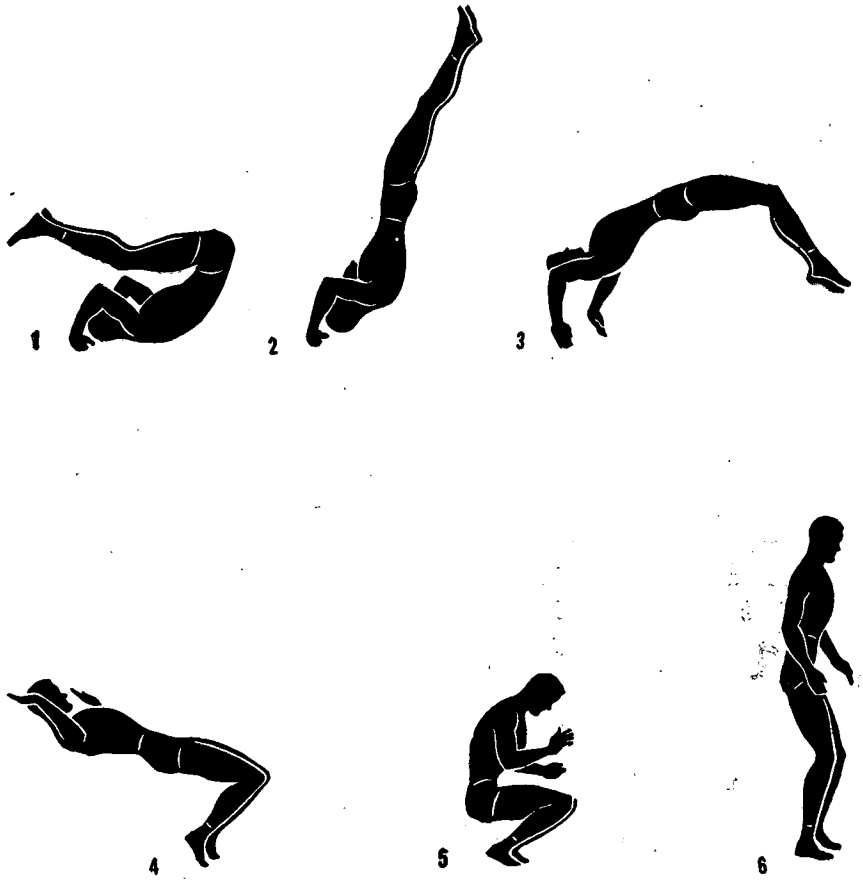

STUNT 14: SNAP-UP

Starting Position. Lying (face up) on the mat with legs backward over head, hands on mat on either side of head, elbows up, fingers pointing forward toward shoulders, knees straight.

Movement. Start to roll forward and extend legs upward and forward (45° angle), pushing hard with hands, head and shoulders. As body rises off the mat, bend knees, arch back, and land on feet.

This stunt may be done with hands placed on the front of the thighs, with most of the drive from the mat coming from neck and shoulders. In learning the stunt, it is helpful to bend knees and to bend forward sharply at hips just as feet touch the mat.

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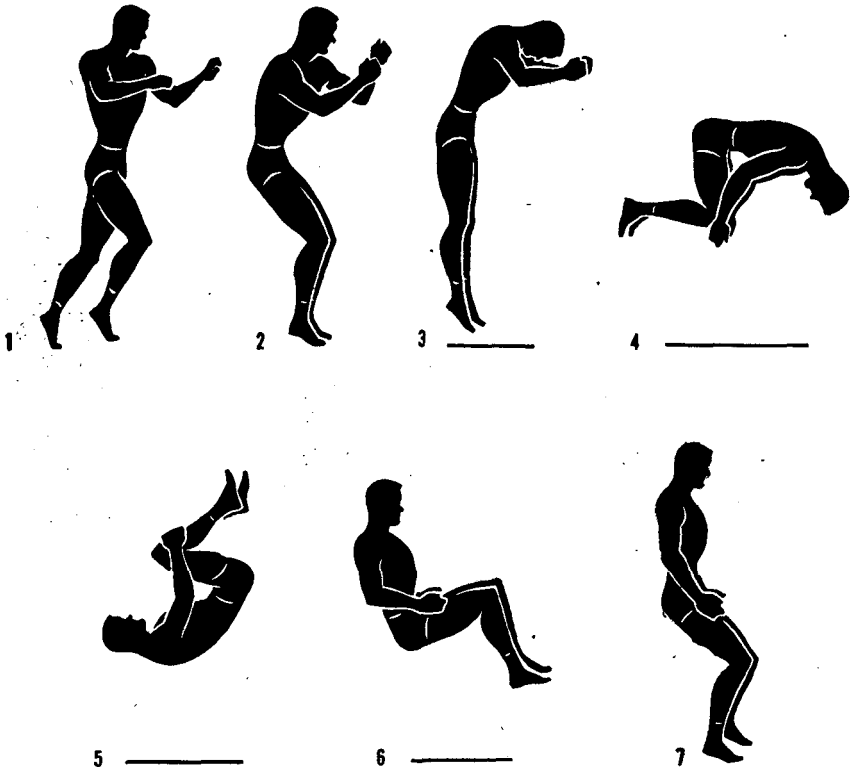
STUNT 15: RUNNING FRONT SOMERSAULT

Starting Position. Standing.

Movement. Run forward and jump onto both feet. Keep arms forward and upward and elbows half bent. Upon alighting on the mat, jump upward, swinging arms and head downward and forward. Tuck legs hard, grasping them below knees with hands, and turn forward in the air. When the turn is nearly complete, straighten legs and body, and land on feet.



STUNT 14: SNAP-UP

Starting Position. Hands shoulder-width apart on the mat, with fingers slightly spread and pointing forward; body and legs in a crouch position.

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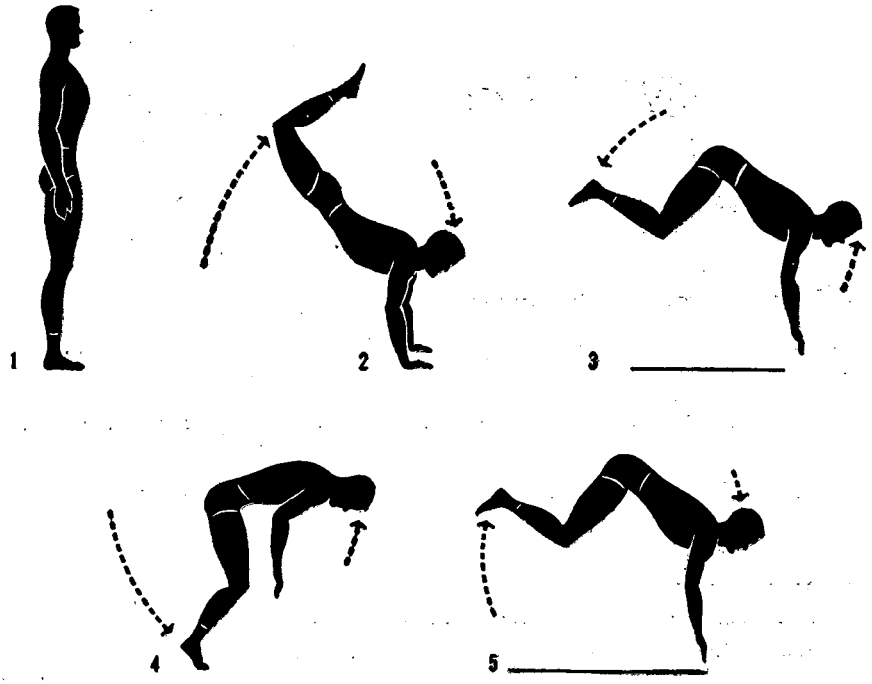
Movement. Kick rear leg upward, immediately following with other leg. First lean shoulders forward ahead of hands, then as legs rise, bring shoulders back to a position directly over hands. Keep back arched, legs together, toes pointed, and eyes focused on a spot about 1 foot ahead of hands. If there is a tendency to overbalance forward, press down hard with fingers, extend elbows vigorously, and let legs arch slightly over back. If the tendency is to overbalance backward, put the weight on heels of hands, bend elbows slightly, and permit head and shoulders to move forward.

STUNT 17: BUCKING BRONCO

Starting Position. Standing.

Movement. Jump upward, bend body forward, and alight on hands in a near hand-stand position, with knees bent. Hold this position momentarily, then snap feet downward to the mat, push hard with hands and alight on feet, trunk bent slightly forward. This movement is done continuously.



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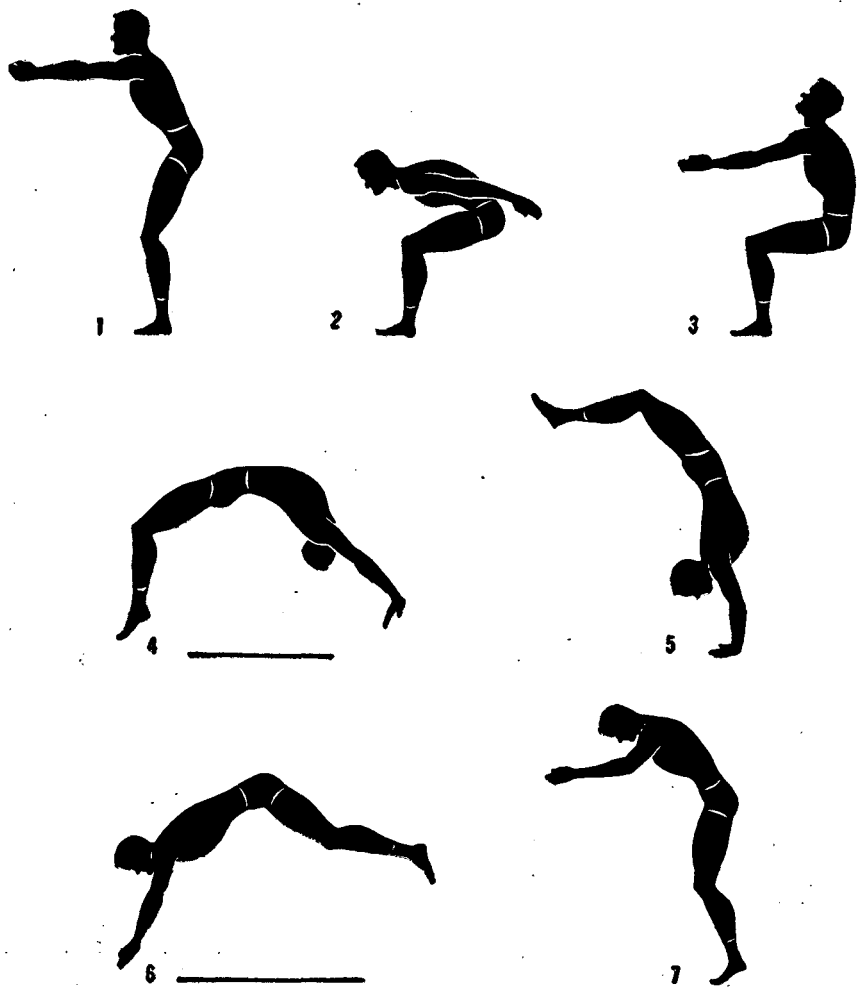

STUNT 18: BACK HAND SPRING

Starting Position. Standing, with knees slightly bent, body erect, and arms forward.

Movement. Swing arms downward and backward. Keeping knees bent, fall backward as if sitting on a chair with trunk bent forward. As you lose balance backward, throw arms vigorously upward, and backward. At the same time arch back, extend knees, and jump upward slightly. Carried around backward by the momentum of the arm swing, alight on hands with arms almost straight in hand-stand position. Then snap legs down, and land on feet.

In the beginning always practice this stunt with a tumbling belt or with an assistant on either side holding the belt with one hand.

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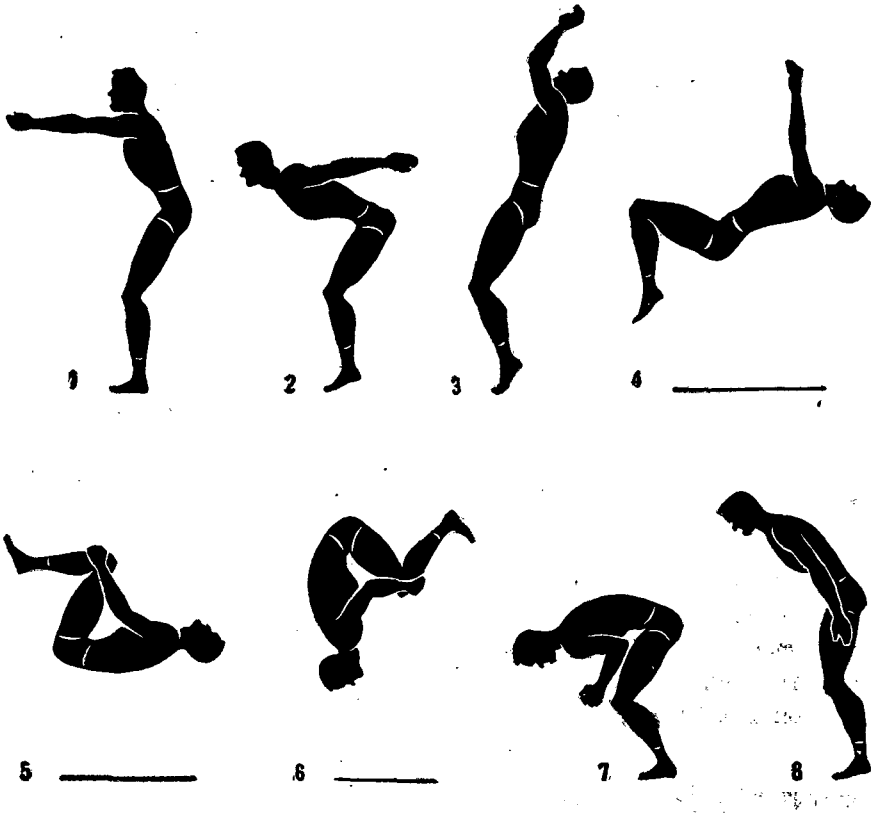

STUNT 19: BACK SOMERSAULT

Starting Position. Standing, with knees slightly bent, body erect, and arms forward.

Movement. Swing arms downward and backward and bend knees to about a half-squat position. Keep body balanced and upright. Then swing arms forward, upward, and backward. At the same time spring vigorously upward and slightly backward. Then tuck legs, grasp shins, and make a backward somersault in the air in this position. When the turn is almost complete, let go of shins, straighten legs and body, and alight on feet.

This stunt should be practiced at first with tumbling belt or expert spotter.

Section III. DOUBLE TUMBLING

110. GENERAL

a. In double tumbling, the men work in pairs (some combination stunts are done with three or more men). When two men work together they are usually

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known as the "top man" and "bottom man". The "bottom man" is also known as "the thrower." The top man performs the tumbling while the bottom man gives support or provides the force for the movement. In general, the bottom man should be somewhat heavier and stronger than the top man. However, two able performers who are sufficiently strong may alternate at top and bottom. In the descriptions that follow, the top man is called No. 1 and the bottom man, No. 2.

b. To insure perfect coordination of the movements, the two men use prearranged signals, such as "One" and "Two" or "Allez-oop." It should always be made clear whether the top man is to go through with the stunt or merely try for timing.

111. DOUBLE TUMBLING STUNTS

STUNT 1: LEAP FROG AND ROLL

Starting Position. Top man (No. 1) about 4 feet behind bottom man (No. 2), both facing the same direction. Both stand with knees slightly bent and forearms resting on thighs just above knees.

Movement. No. 1 performs a straddle vault over No. 2. When he lands on the mat, both simultaneously execute a forward roll rising to the starting position. No. 2 then vaults over No. 1, and both repeat the roll.

STUNT 2: ELEPHANT WALK

Starting Position. Standing face to face.

Movement. No. 1 places hands on No. 2's shoulders, jumps high astride No. 2's waist, and locks feet behind No. 2's legs, grasps No. 2's ankles from

behind, and extends elbows. At the same time, No. 2 bends forward, places hand on the mat, and walks forward on all fours, carrying No. 1.

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STUNT 3: ROCK OR SEESAW

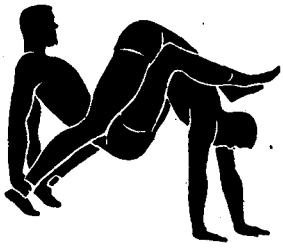
Starting Position. Top man (No. 1) sitting on mat, with knees slightly bent and feet on the mat. Bottom man (No. 2) facing him, sitting on No. 1's feet, with legs over No. 1's thighs, and feet on mat under No. 1's buttocks, grasping each other's shoulders with hands.

Movement. No. 1 rolls backward pulling No. 2 to a bent-knee stand. No. 2 then rocks backward pulling No. 1 to a bent-knee stand.

STUNT 4: CAMEL WALK

Starting Position. Top man (No. 1) standing 3 feet in front of bottom man (No. 2), both facing in the same direction.

Movement. No. 1 bends forward, places hands on the mat, and with No. 2's assistance, clasps legs around No. 2's waist, locking feet behind. No. 2 bends



forward and places hands on the ground. No. 1 ducks between No. 2's legs and places hands on No. 2's ankles from behind. No. 2 then walks forward carrying No. 1. (Similar to elephant walk except man is carried face up.)

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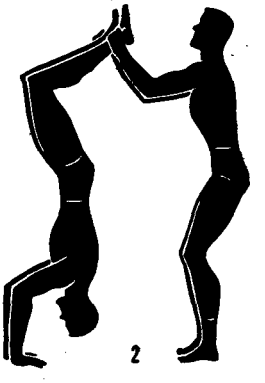
STUNT 5: MONKEY WALK

Starting Position. Top man (No. 1) standing 3 feet in front of bottom man (No. 2), both facing in same direction.

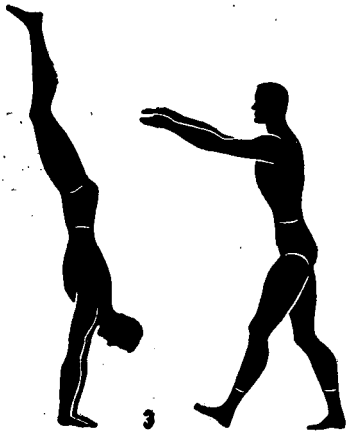
Movement. No. 1 bends forward, places hands on the mat and, with No. 2's assistance, clasps legs around No. 2's waist, locking feet behind. No. 2 bends forward and places hands on the ground. No. 1 ducks between No. 2's legs and wraps arms about No. 2's hips from behind No. 2 then walks forward carrying No. 1.



STUNT 6: ANKLE PICK-UP

Starting Position. Top man (No. 1) lying on back with hands behind shoulders on mat, fingers pointing forward toward shoulders and legs vertical. Bottom man (No. 2) standing at No. 1's hips, facing No. 1 and grasping No. 1's ankles.

Movement. No. 2 pulls No. 1's legs upward. No. 2 pushes No. 1's legs away from him. At the same time No. 1 straightens body and hips, presses heels against force of No. 1's hands, and pushes up with his own hands. As No. 2 releases No. 1's ankles, No. 1 performs a snap-down landing in standing position, facing No. 2.



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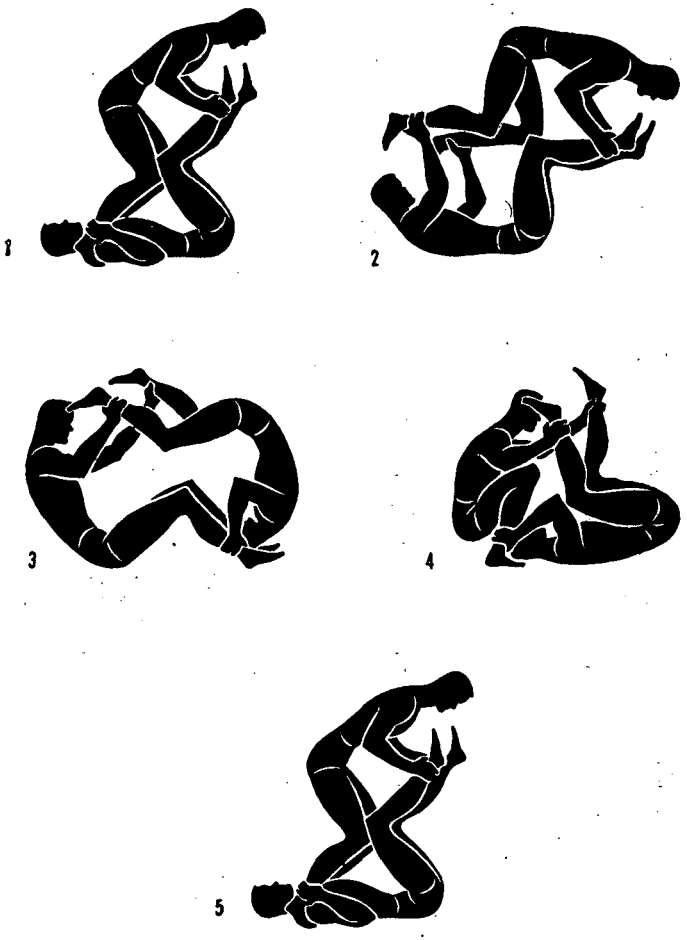

STUNT 7: DOUBLE ROLL

Starting Position. Bottom man (No. 2) lying on back, legs upward, knees bent, feet apart about 10 inches. Top man (No. 1) standing with one foot on either side of No. 2's head and facing No. 2's feet. Each clasp the other's ankles.

Movement. No. 1 dives, and pulls No. 2 over. No. 2 then dives and rolls over No. 1 in the same manner.

The movement is continued for as many rolls as desired. Upon reaching the end of the mat, the men retain the same position and execute a number of rolls backward. In executing the backward roll, the man starting backward pulls hard on his partner's ankles.

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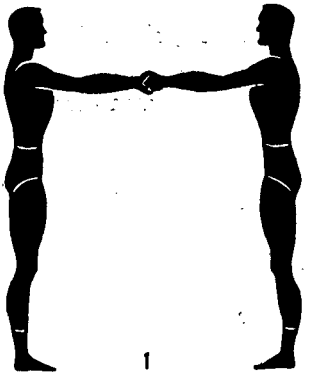
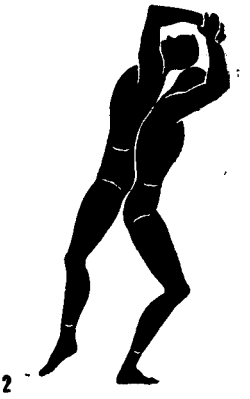
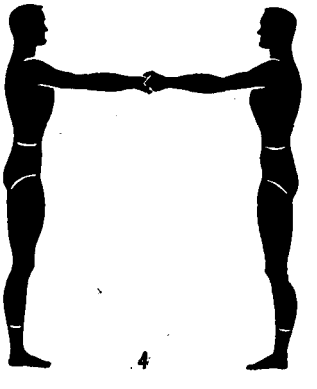
STUNT 8: BACK-TO-BACK AND OVER

Starting Position. Standing face to face 4 feet apart, arms forward, grasping each other's hands.

Movement. Retaining the grasp, the men turn under one arm until they are back to back, arms overhead. No. 2 crouches slightly and bends forward, pulling No. 1 backward over back. No. 1 lifts feet "tucks" slightly, and rolls backward over No. 2's back, dropping to the mat facing No. 2. Hands remain clasped. The exercise is repeated with No. 1 pulling No. 2 over his back.







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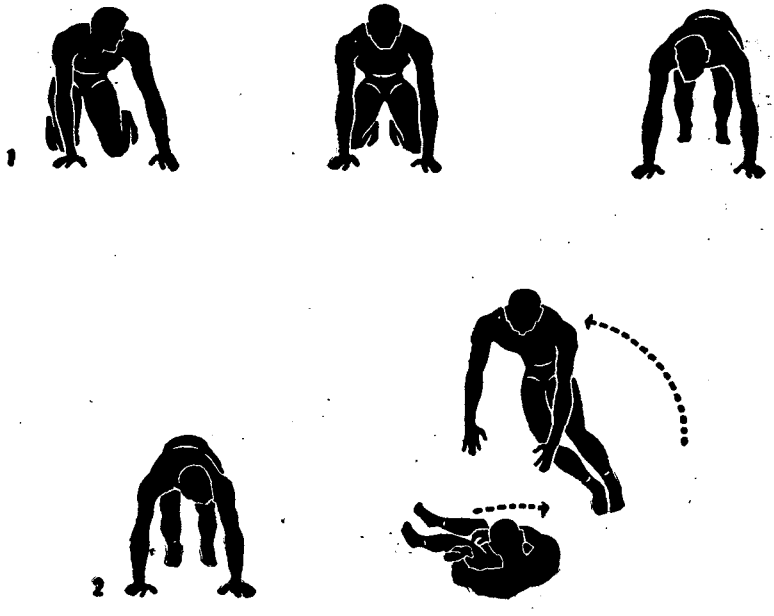
STUNT 9: ROLL AND DIVE

Starting Position. Both men on hands and knees, about 6 feet apart, facing the same direction, crosswise to the mat.
Movement. No. 2 rolls sideward toward No. 1, who dives diagonally over him and rolls sideward. No. 1 then rolls toward No. 2 who dives over him.

STUNT 10: TRIPLE ROLL AND DIVE

Starting Position. Three men on hands and knees, about 6 feet apart facing the same direction, crosswise to the mat.
Movement. The middle man rolls out, and the end man dives over him and rolls out. For example, if the three men are numbered No. 1, No. 2, and No. 3 then No. 2 rolls toward No. 1 who dives over No. 2 and rolls toward No. 3. Then No. 3 dives over No. 1 and rolls toward No. 2 who dives over No. 3, and so on.



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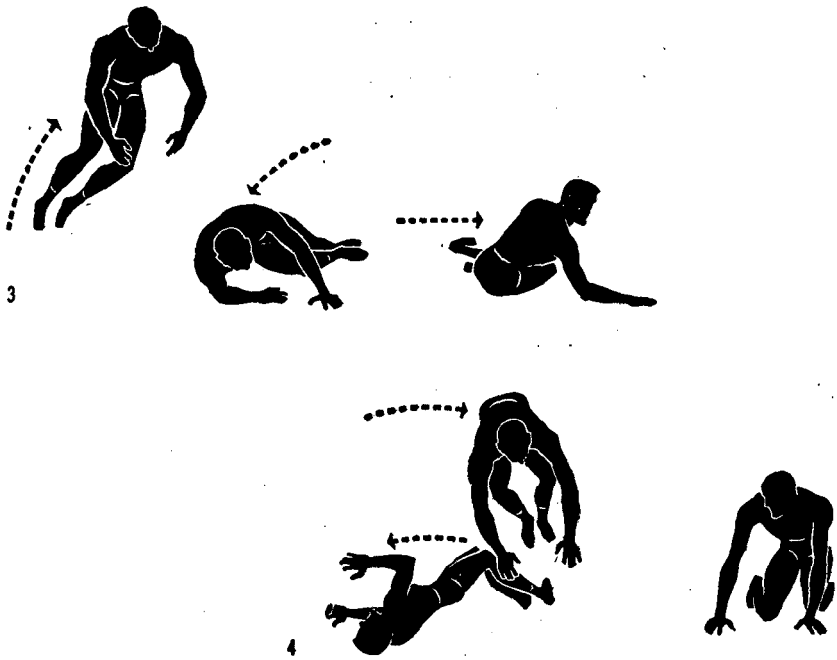
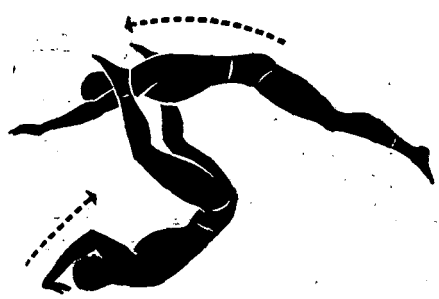


STUNT 11: OVER-AND-UNDER DIVE

Starting Position. Standing face to face, 8 feet apart.
Movement. No. 2 executes forward roll, with legs spread widely apart. No. 1 dives through No. 2's legs, as No. 2 is rolling, and executes a forward roll. Both men rise to feet, turn about face to face, and repeat with No. 2 diving through No. 1's legs.



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STUNT 12: HAND BALANCE AND PULL-OVER

Starting Position. Top man (No. 1) standing 5 feet behind bottom man (No. 2), both facing the same direction.

Movement. No. 1 does a handstand directly behind No. 2. Then No. 2 grasps No. 1's ankles over his shoulders and leans forward. No. 1 rises to a sitting position on No. 2's back. No. 2 straightens up and pulls No. 1 to a sitting position astride his shoulders. No. 2 then leans forward permitting No. 1 to slide forward to a standing position on the mat. The stunt is repeated with No. 1 pulling No. 2 over.

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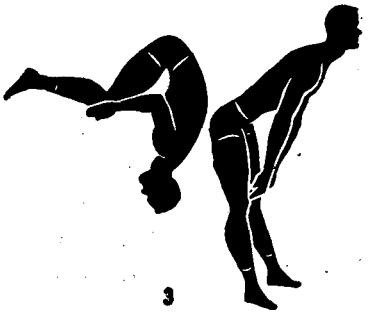
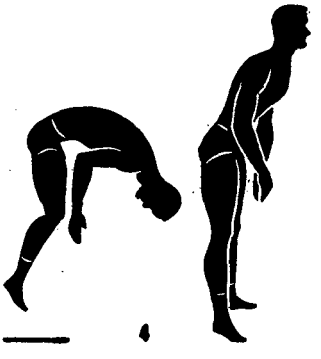
STUNT 13: NECK LIFT

Starting Position. Bottom man (No. 2) standing 3 feet behind top man (No. 1), both facing the same direction.

Movement. No. 2 bends knees and bends trunk forward, putting head between No. 1's legs. No. 2 places hands or forearms on his own knees. No. 1 bends backward, placing hands on No. 2's shoulders. At the same time No. 2 raises up, No. 1 rolls backward over No. 2's back, dropping to a standing position behind No. 2. No. 2 should raise up vigorously and toss No. 1's hips with shoulders. They repeat, reversing positions. When the men have learned this stunt, No. 1 can roll backward, with hands over head.





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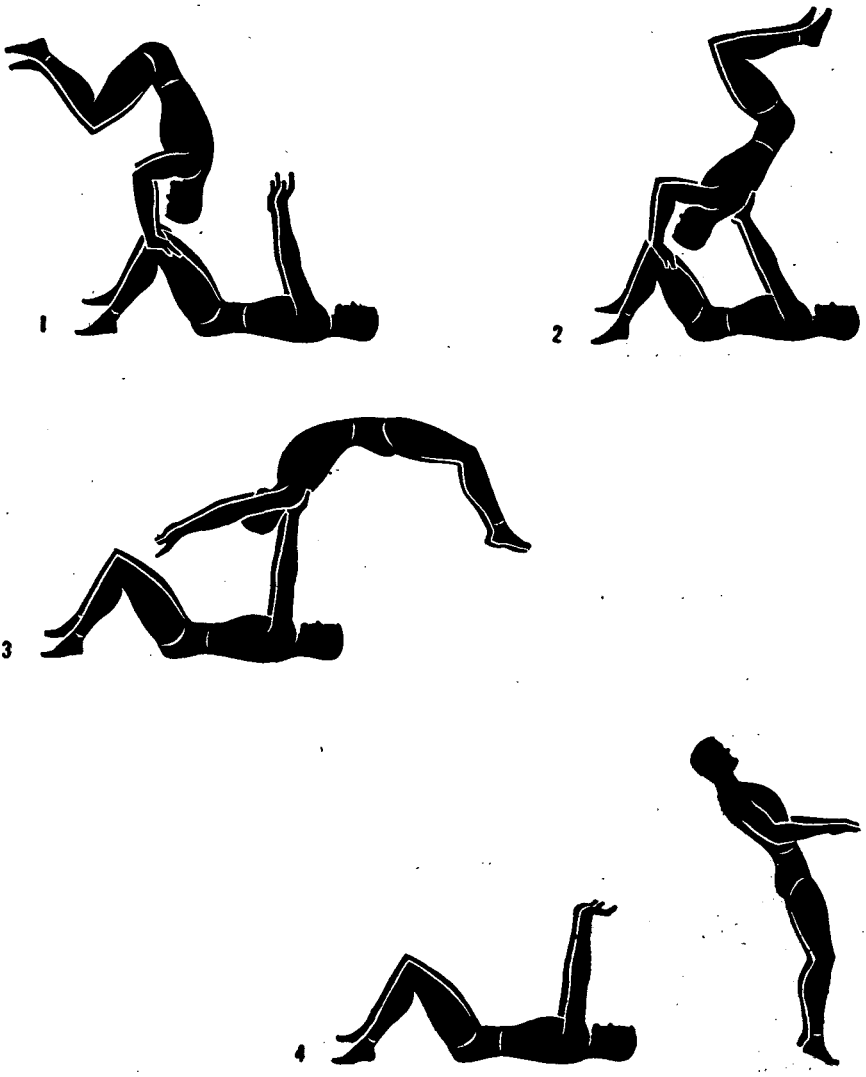

STUNT 14: KNEE ROLL

Starting Position. Bottom man (No. 2) on back, legs drawn up, arms by sides. Top man (No. 1) stands facing No. 2 about 10 feet away from his feet. **Movement.** No. 1 approaches with moderate speed, places hands on No. 2's knees, makes a little dive, and begins to roll across No. 2. No. 2 places hands on No. 1's shoulder blades as he comes rolling across, and pushes upward and backward. This push supports No. 1's body in "half tuck" position and carries No. 1 over to his feet, half crouched. This is a roll, not a hand spring.

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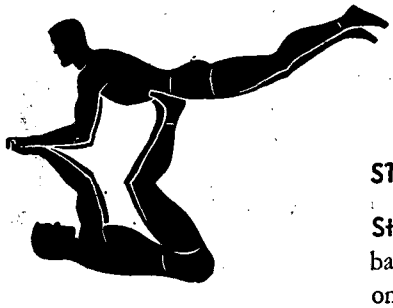
STUNT 15: SHOULDER BALANCE

Starting Position. Bottom man (No. 2) on back, feet apart and on floor, legs drawn up, arms by sides. Top man (No. 1) stands facing No. 2 about 10 feet away from his feet.

Movement. No. 1 places hands on No. 2's knees and leans forward putting shoulders in No. 2's hands. No. 1 straightens arms and kicks up to a shoulder stand, keeping hands on No. 2's knees and shoulders in No. 2's hands. No. 2's arms should be straight, and his legs steady.



STUNT 16: BELLY BALANCE

Starting Position. Bottom man (No. 2) on back, with legs upward; Top man (No. 1) on mat at No. 2's hips, facing No. 2.

Movement. No. 2 turns toes outward. No. 1 grasps No. 2's ankles and places No. 2's feet on No. 1's abdomen. He then releases No. 2's ankles and grasps No. 2's hands. No. 1 leans forward, putting his weight on partner's feet, and pulls with his arms. No. 2 straightens knees, raising No. 1 to an arched position.

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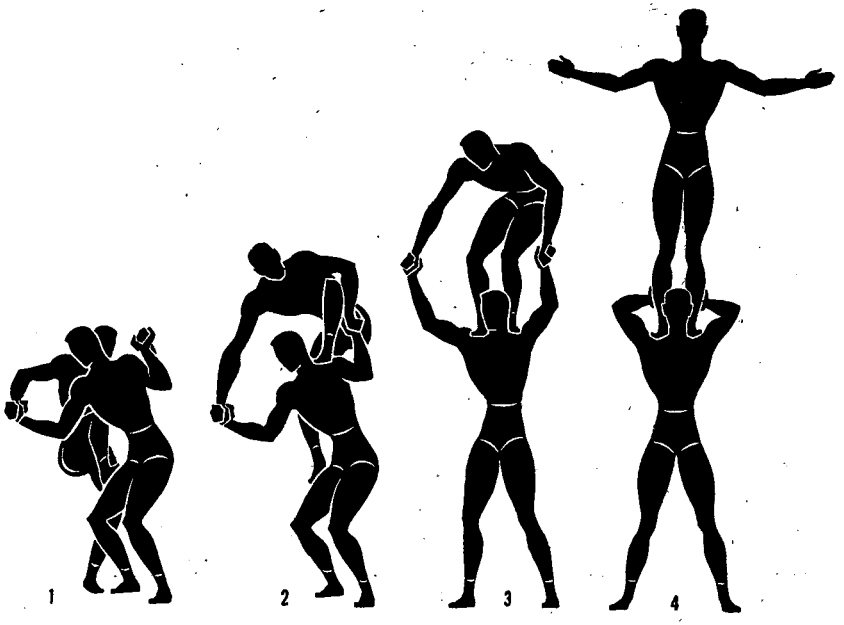
STUNT 17: SHOULDER MOUNT

Starting Position. Standing face to face, about 4 feet apart, hands clasped with arms crossed. (Hand position: Right hands are grasped as in shaking hands; left hands are turned forward and grasped. Left hands are over right hands.)

Movement. No. 2 separates feet and bends knees until left thigh is almost horizontal. No. 1 places right foot with toes pointed outward on No. 2's right thigh near hip. No. 1 then approaches in as close as possible and using No. 2's right thigh for a step, steps upward and places left foot on No. 2's left shoulder. Both men face the same direction. No. 2 then straightens up and No. 1 places right foot on No. 2's right shoulder. No. 1 brings knees together. No. 2 bends head backward against No. 1's shins, and grasps No. 1's calves just below knees. No. 1 straightens up. In stepping up, No. 1 should have his center of weight as close to No. 2 as possible. No. 2 helps with arms, and sees to it that his own arms are well away from his head so that there is ample room for No. 1's feet. From that position both men start to fall forward and fall slowly until at an angle of about 45° to the mat. No. 1 then drops off and just as he hits the mat, both men perform forward rolls. After having mounted to the two-high position, No. 2 may, if he wishes, walk forward to the other end of the mat and turn around before performing forward dismount.



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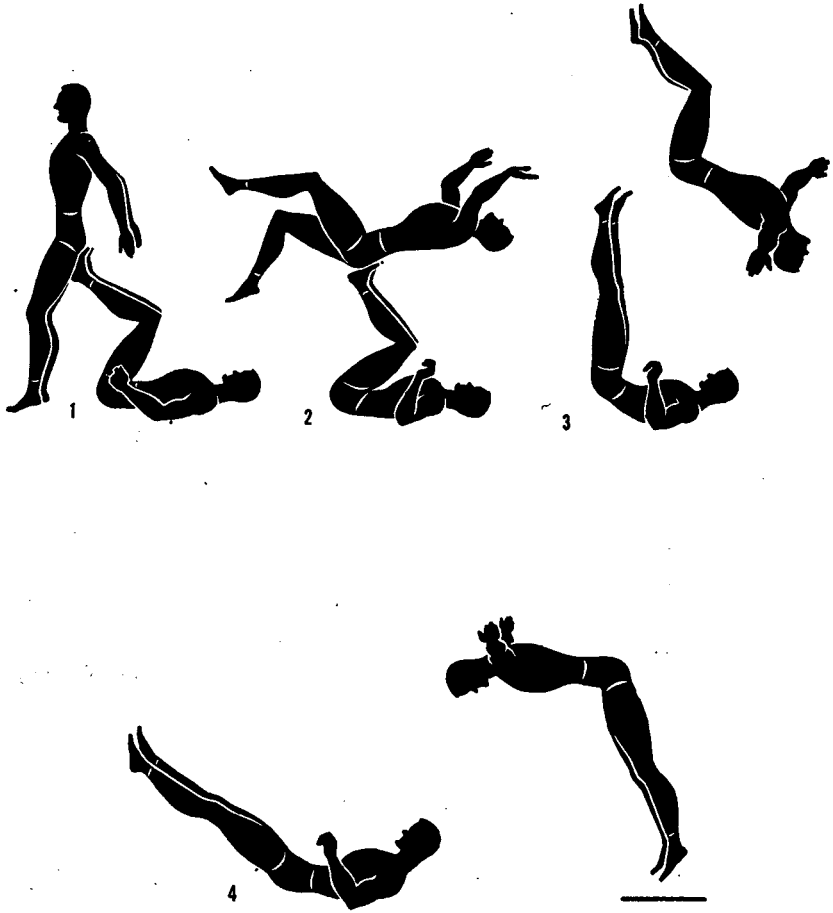

STUNT 18: BACKWARD ROLL OVER FEET AND HANDS

Starting Position. Bottom man (No. 2) lying on back, legs upward, knees bent, and arms vertical. Top man (No. 1) standing with back to No. 2, feet at No. 2's hips.

Movement. No. 1 leans backward, placing his buttock on No. 2's feet. No. 1 rolls over backward. At the same time to support No. 1 and carry him over No. 2 pushes with feet. No. 1 rolls over backward and snaps feet downward to standing position. If necessary, No. 2 places hands under No. 1's shoulders and pushes upward and backward as No. 1 rolls across.

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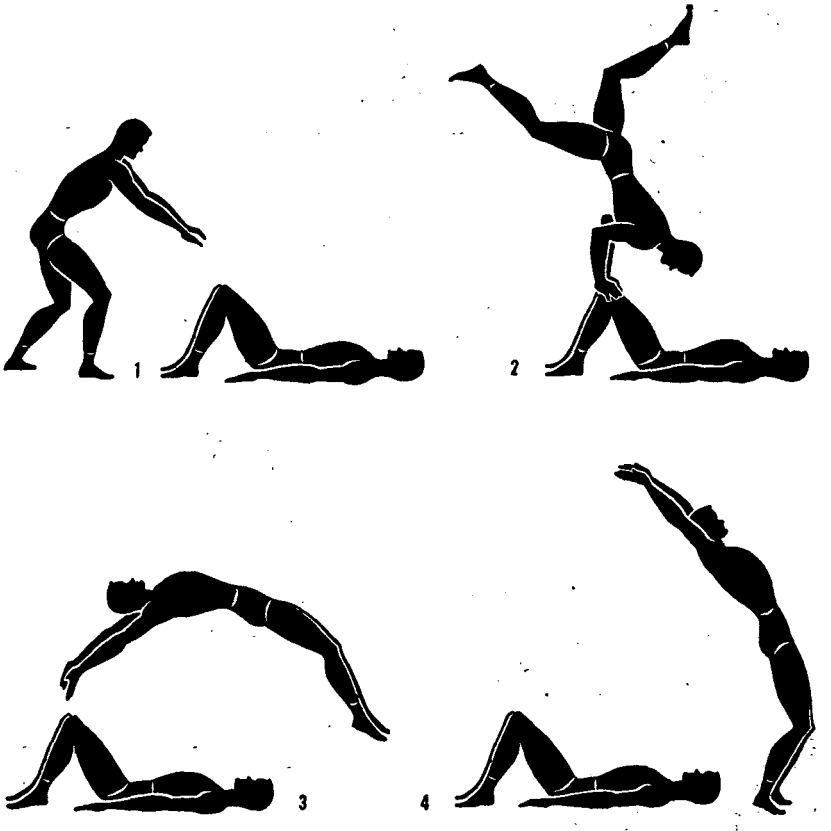
STUNT 19: KNEE HAND SPRING

Starting Position. Bottom man (No. 2) lying on back, knees flexed, feet on mat. Top man (No. 1) stands facing No. 2 about 15 feet away from his feet. **Movement.** No. 1 runs forward, executes a skip step, places hands on No. 2's knees, and lands in a standing position beyond No. 2's head. No. 2 supports No. 1's shoulders if necessary.



STUNT 20: GROIN PITCH

Starting Position. Bottom man (No. 2) lying on back, legs up, knees bent, feet turned outward, arms vertical. Top man (No. 1) stands facing No. 2 close to his hips. Partners grasp each other's hands.

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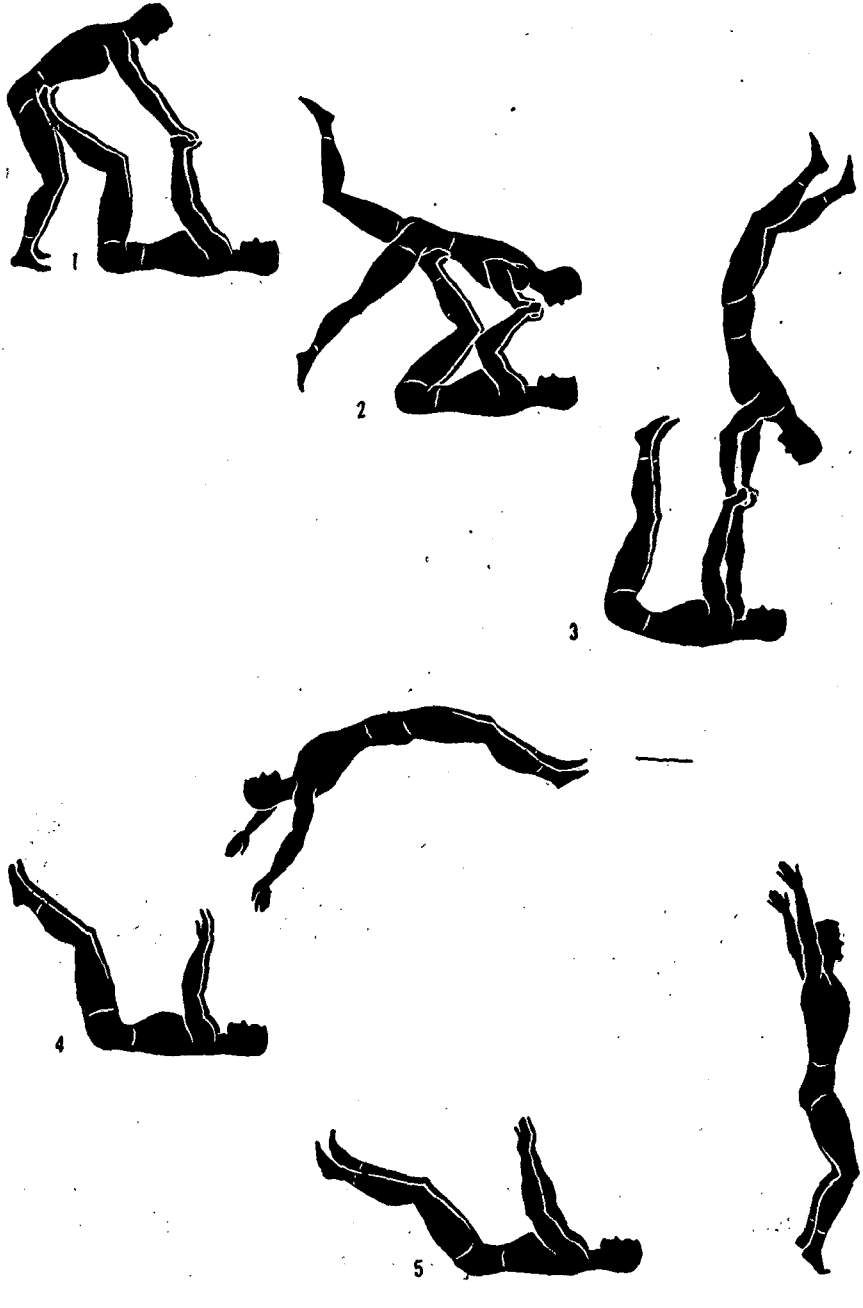
Movement. No. 1 leans forward, No. 2 kicks upward and backward, throwing No. 1 in forward hand spring over head. No. 1 lands, standing away from No. 2's head.



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STUNT 21: BACK SOMERSAULT WITH LEG

Starting Position. The top man (No. 1) stands sideways in front of bottom man (No. 2) with near leg raised to a horizontal position. No. 2 has one hand under No. 1's ankle, and the other hand under the middle of No. 1's thigh. No. 1's near hand is on No. 2's shoulder.

1

2

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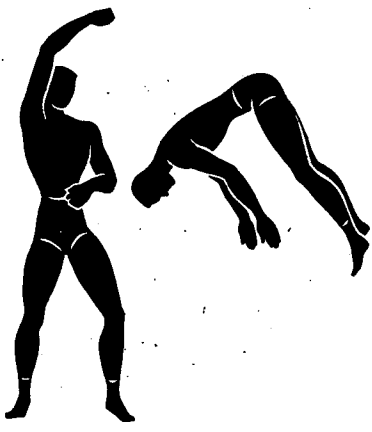

4

Movement. No. 1 does back somersault, springing from standing leg. No. 2 lifts No. 1's leg vigorously. No. 1 offers resistance by pushing leg downward against No. 2's hands.

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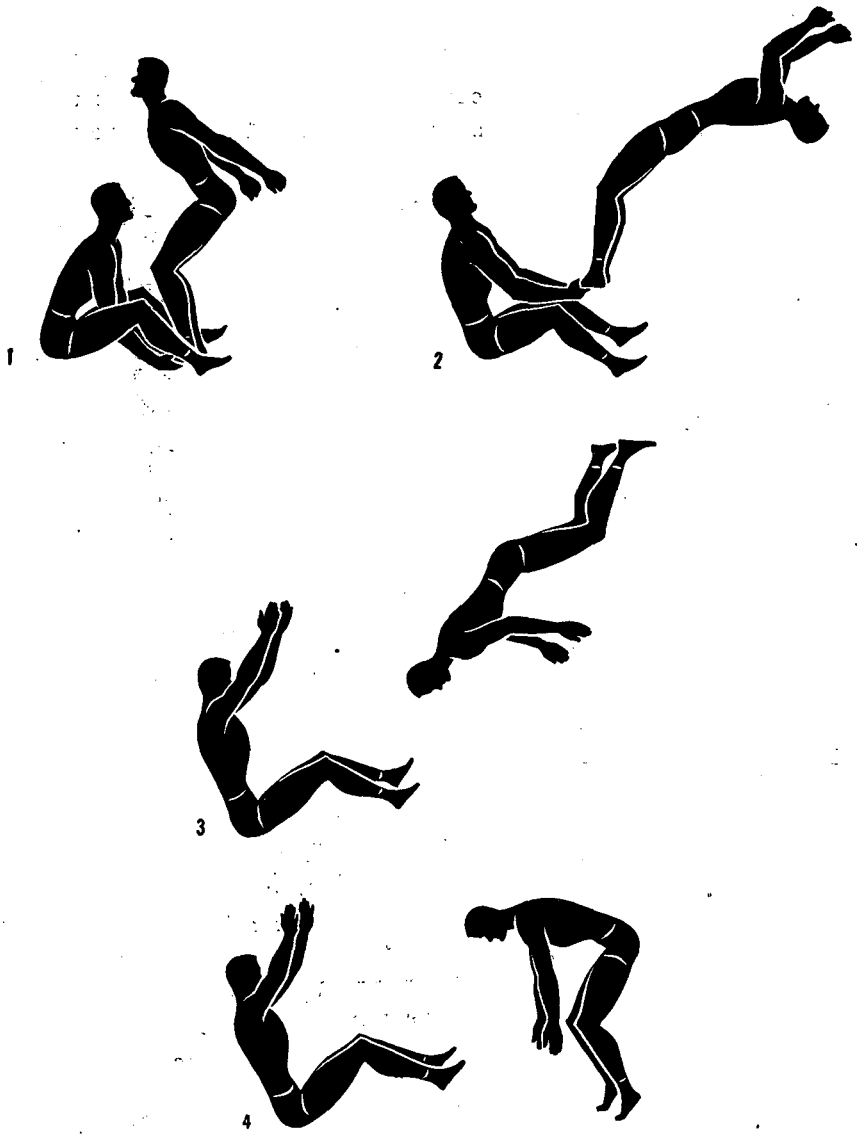
STUNT 22: BACK SOMERSAULT FROM HANDS

Starting Position. No. 2 sitting on mat, feet apart, hands between legs on mat, palms up. Top man (No. 1) standing on No. 2's hands with fore part of feet.

Movement. No. 1 turns back somersault. No. 2 assists him by throwing hard with both hands.



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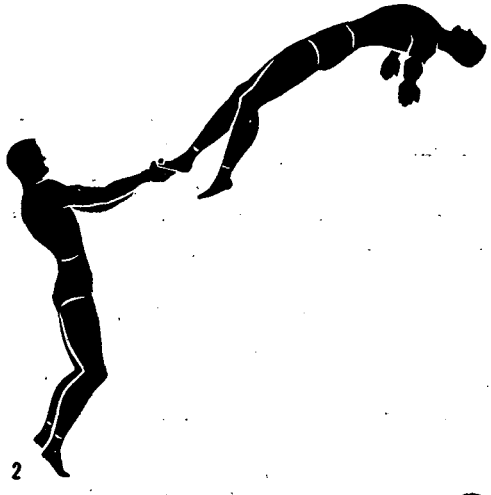
STUNT 23: THE PITCH

Starting Position. Partners facing each other, about 10 feet apart.

Movement. No. 2 separates feet; bends knees slightly; places right hand within left hand, palms up; and holds both hands just in front of and below his belt. No. 1 walks forward and places right foot in No. 2's hands. No. 1 then springs upward and only slightly backward, stepping downward vigorously with right foot. No. 2 lifts up and away, throwing No. 1 in back somersault.



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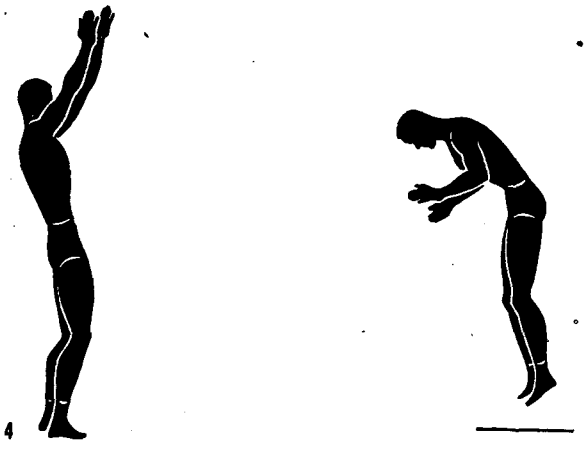

STUNT 24: PLANCHE

Starting Position. Top man (No. 1) standing about 3 feet in front of bottom man (No. 2), both facing the same way.

Movement. This stunt may be done in two ways: In one method No. 2 grasps No. 1's hips. No. 1 jumps upward slightly. No. 2 assists the jump, and No. 1 jumps to position with feet on No. 2's, thighs just above knees. At the same time, No. 2 bends knees to a half-squat. No. 2 then leans backward and No. 1 leans forward. No. 2 grasps No. 1's legs just above knees.

In the second method, No. 2 places head between No. 1's legs and raises No. 1 astride his neck. No. 1 then places feet on fronts of No. 2's thighs, No. 2 takes head from under No. 1, and grasps No. 1's legs. To dismount, No. 1 jumps off.

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CHAPTER 15

SWIMMING AND LIFE SAVING

Section I. SWIMMING

112. SWIMMING AS A MILITARY ACCOMPLISHMENT. **a** In the past, many soldiers have lost their lives through their inability to handle themselves in the water. This has been due partly to lack of training in methods of swimming and water safety generally, and partly to lack of instruction and practice in the specific military problems of amphibious warfare. Furthermore, lack of confidence and experience on the part of many soldiers has frequently seriously handicapped or caused the complete failure of attempted maneuvers. Present-day warfare, with its submarine attacks on troop ships, landings of troops from small boats under fire and battles over flooded areas, and across streams and canals, has given a new emphasis to the importance of swimming in the training of a soldier.

b. All soldiers should receive instruction and training in swimming, both without and with equipment, to give them the confidence which comes from actual experience in the water. Properly instructed soldiers should be able to ford streams, participate in landing operations, and take care of themselves in the water in emergencies.

c. The buoyancy of the full pack furnishes considerable support to a man in the water for a short time, making swimming a short distance relatively easy. The light pack has little, if any, buoyancy and is a hindrance instead of an aid. Therefore, as soon as a soldier has acquired an elementary knowledge of swimming, he should be given practice in swimming with a gradually increasing amount of equipment until he is able to negotiate a reasonable distance in the water without becoming exhausted or without damaging his equipment.

d. After learning the fundamental swimming strokes, the men should be given practice in abandoning ship procedures and the operation of life rafts, floats, and general emergency equipment. This material is available in FM 21–22.

e. Although it is highly desirable that every soldier be an expert swimmer, it is hardly to be expected. A most valuable beginning can be made, how-

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ever, by striving for a reasonable degree of proficiency in those swimming activities which have most military value. Such activities include:

(1) A good working knowledge of the elementary backstroke, the breast stroke and the side stroke.

(2) The ability to swim short distances with arms or legs only.

(3) The ability to swim a short distance when fully dressed and when carrying equipment.

(4) A fair knowledge of the fundamentals of personal safety and self-defense in the water.

(5) A fair knowledge of the methods of rescuing those in peril of drowning and of reviving those who have apparently drowned.

(6) At least some elementary experience in competitive swimming activities, for their recreational value. This should be delayed until basic swimming tests have been passed.

f. Instruction in diving is unnecessary since diving has no military value. Normally the soldier will never be forced to take to the water by diving. The shallow plunge entrance into the water and surface diving should be taught, however, for use in sudden forced entrance into the water in cases of airplane strafing attacks. However, facilities for diving should be provided for recreational use. The high (3 meter) boards are useful for practicing in jumping into the water in practicing abandoning ship procedures. (See FM 21–22.)

113. FACILITIES. a. If a natural lake or stream is used, the water where beginners are to be instructed should be from 3½ to 4 feet deep. Water for advanced swimmers and divers should be 8 to 12 feet deep, especially beneath the diving board. There should be no sudden dropping off into deep water. The water should be quiet, and there should be a vantage point from which the instructor can see all those in the group. If a pool is used, water temperature should be 77° to 78° Fahrenheit.

b. If a dock system is to be constructed, the H shaped dock should be built. The water in one side should be shallow for beginners instruction, and in the other side deeper for the advanced swimmers. With this type of dock the instructor has numerous vantage points from which to teach.

c. Cans for aid in staying afloat are extremely useful, and should be provided if at all possible. (See par. 118g.) These may be made by soldering together the bases of two No. 8 fruit cans, and providing two loops of wire, 5½ inches apart, in the middle, through which to pass webbing straps or tape for fastening the cans around the chest. The cans should be well painted with waterproof paint to prevent rusting. Each can should be numbered. Water aids, such as kick boards and inflated rubber tubes, are useful but not essential. Lifesaving equipment, such as ring buoys, a long pole, etc., should be on hand.

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114. ADMINISTRATION. **a.** Only instructors who are well trained in the Army's method of swimming and who are competent demonstrators should be entrusted with the task of teaching swimming. Their qualifications should be similar to those of graduates of the Red Cross Instructors' course.

(1) The staff should work out definite policies for organizing and teaching the swimming. It is well to have numerous staff meetings to consider problems as they come up.

(2) The specific duties of each staff member, both officer and enlisted personnel, should be clearly defined, so that responsibilities are clearly understood.

b. A detailed analysis should be made of the time available; length of the teaching periods; facilities and equipment; size of group to be taught each hour; what officer and enlisted personnel must be organized, and what rules, standards and regulations should be put into effect.

c. The sanitation of the pool and docks will be supervised by the medical inspector of the post.

(1) Bacterial tests will be made at least twice a week.

(2) The floor of the pool room will be washed daily with a disinfecting solution of a strength sufficient to kill fungi.

(3) Hair strainers and filters will be checked regularly by the Post Engineer.

(4) Soldiers will not exchange towels and clothing.

(5) Soldiers with foot or other infections will report to the dispensary, and will not swim until cured.

(6) Foot baths will be emptied, scrubbed, and refilled with fresh disinfectant every day.

d. The plant will be inspected daily, and necessary repairs and replacements made.

e. Schedules for testing will be made and posted.

f. Records of attendance, tests, and progressive achievement will be kept.

g. The classes will be organized according to the achievement abilities of the men to be taught.

h. Schedules will be prepared for:

(1) Regular progressive instruction. There should be separate instruction for (a) beginners, (b) intermediate swimmers (those who have passed the C test) and (c) advanced swimmers (those who have passed the B test).

(2) Instruction for those who are for some reason resistant to instruction. This group, termed the "sub squad", will be given additional time for instruction. This squad is not composed of all beginners, but only those who fail to make normal progress.

(3) Recreational periods.

i. Adequate safety precaution will be taken.

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(1) In indoor pools, lighting should be strong enough for men to be clearly seen under water.

(2) Surface along sides and edges of pool should be non-slippery.

(3) The rule of *no running or games* on wet and slippery surfaces around the pool should be strictly enforced. This rule applies also to the entrance to the pool room.

(4) The diving boards should be located where the water is at least 8 feet deep, and where there are no underwater obstacles. Low boards will be 1 meter high, (39 inches). High boards will be 3 meters (10 feet) high. Water should be at least 10 feet deep under the 3 meter board.

(5) Swimming in pools, rivers, or other bodies of water known to be unsanitary will be prohibited.

(6) Swimming alone, except in emergency, will be prohibited.

(7) Supervision on trial swims, where participants' capabilities are not known, should be especially close.

(8) Life guards should give especially close supervision to areas in the region of diving boards and ladders, semi-deep water where nonswimmers readily get beyond their depth, and deep water.

(9) Diving into unfamiliar water will be prohibited.

(10) Calls for help will never be uttered in fun.

(11) Cold water should be entered by degrees.

(12) Sun bathing will not be indulged in for too long periods of exposure. Bad burns require the services of the surgeon.

(13) The life guards' stands must be kept for life guards alone. Others will not converse with life guards except in emergencies.

(14) Life guards must be well versed in swimming and life saving and be familiar with methods of resuscitation.

j. In case of accident involving a possible drowning, the instructor in charge will proceed as follows:

(1) Rescue the victim.

(2) Send for surgeon at once.

(3) Administer artificial respiration.

(4) Clear area where victim is lying of all people not assisting the instructor.

(5) Send for blankets and hot pads.

(6) Notify officer in charge at earliest opportunity.

(7) Make full report of the accident as soon as possible to officer in charge of swimming.

115. STANDARD SWIMMING TESTS. a. The swimming tests are designed to classify soldiers as to their present swimming abilities, and to both motivate and measure progress in swimming ability. It will be noted that these are minimum standards. Every effort will be made to improve swimming ability

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beyond this minimum. Where feasible, soldiers who have passed the *A* test should take the Maintenance Check test every 3 months. If unable to pass this check test, they should again engage in swimming practice to bring endurance up to standard.

(1) Beginner's (C) Test. Jump into the water from float or bank of pool. Swim 50 yards, using any stroke. Soldiers who fail this test are classified non-swimmers, and are placed in a class for beginners.

(2) Intermediate (B) Test.

(a) Jump into the water from a height of 10 feet. Swim 100 yards, using at least three different strokes (selected from the back, side, breast, Trudgeon. crawl, or back crawl strokes), each for at least 25 yards.

(b) Stay afloat at least 10 minutes.

(c) Swim 30 feet under water.

Only swimmers who have passed the Beginner's Test will take this test. Those who pass this test are classified as intermediate swimmers and are considered ready for instruction in advanced swimming and in life saving. Those who fail are classed as "elementary swimmers" who need additional help and coaching on swimming fundamentals.

(3) Advanced (A) Test.

(a) Swim 220 yards, or for 10 minutes continuously, using back, breast and side (both sides) strokes, each one for at least 50 yards; or swim for 20 minutes continuously.

(b) Jump into water feet first, and swim underwater 25 yards, breaking water to breathe not more than twice.

(c) Remove trousers in water, and inflate them for support. (FM 21–22.)

(d) Approach a man of approximately equal size in the water, demonstrate one break or release from either a front or back head hold. Tow the man 25 yards with any carry.

(e) Swimmers passing this test are considered advanced swimmers and able to care for themselves in emergencies.

(4) Expert (AA) Test.

(a) Swim 880 yards, or swim for 40 minutes continuously.

(b) Swim 440 yards wearing shirt and trousers.

(c) From surface dive, swim 50 feet underwater.

(d) In deep water, demonstrate breaks from both front and back head holds. Tow man 50 yards with cross chest, hair, collar or wrist carry.

(5) Maintenance check test. Swim 440 yards in 15 minutes every 3 months. This test should be taken by all swimmers who have passed the Advanced Test. Those not having passed the Advanced Test will continue to try to pass that test.

b. When swimming tests are conducted, many more men can be tested at one time if they swim around a double lane, the ends of which are about 10

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feet from the ends of the pool (sometimes called the "Snake Chain" formation). In this case, the time standard can be used rather than the distance standard (in the advanced test the men would swim 10 minutes continuously rather than 220 yards). This greatly simplifies the test administration of distance swims.

116. INTRODUCTION TO THE TEACHING OF SWIMMING. a. All beginning swimmers and elementary swimmers should be given certain basic instruction. The nonswimmer and the beginning swimmer are often afraid of the water. It is an unfamiliar element, it exerts pressure on the body and hampers freedom of breathing. The beginning swimmer frequently is disturbed by the difficulties in breathing. He feels unnaturally light in the water. He feels that it is difficult to stay on the bottom, and to return to a stand on the bottom after assuming a horizontal position. It is essential that he be:

(1) Oriented to this new element.

(2) Taught the facts relating to the buoyancy of his body in the water.

(3) Taught to open the eyes under water.

(4) Taught the necessity for relaxation in the water.

(5) Given instruction and practice in methods of proper breath control while in the water.

(6) Taught the facts concerning propulsion, resistance in the water, and flotation.

b. *(1)* A non-swimmer is generally fearful of the water because he is unable to breathe while attempting to swim and also because he is not convinced that his body is naturally buoyant. He, therefore, tries to stay high in the water. As a result, he tightens all his muscles, exhausts himself quickly, and creates general discomfort for himself. He must, therefore, be convinced of two things: First, that he can breathe while in the water: and secondly, that he can stay on the surface if he will relax, lie on the surface, and keep moving.

(2) Divide the group into working pairs, and have the pairs stand in the water about 6 feet apart. Explain the fact that the water will hold them up if they stay low in the water. Then give practice in buoyancy and flotation. This will be combined with practice in breathing.

(3) Instruct the men to take a deep breath, bend forward at the waist, and

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slide the hands down the front of the thighs and the legs until they are floating face downward in the water with hands clasping ankles or knees. The ankles may be released and the arms and legs allowed to hang vertically. The eyes should be kept open. This is the "Jelly Fish Float." A variation is obtained by taking a tuck position, with legs doubled up on chest and arms clasped below knees.

(4) Have the men prepare for water breathing exercises. At the command: READY, each man inhales deeply and quickly through the mouth only, and then partially exhales. At the command: GO, each man lowers his head, eyes open, below the surface of the water. He walks towards his partner until he can clasp his right hand. Then both raise their heads above the water and assume the standing position. This exercise should be repeated until all men do it easily.

(5) Line up the men facing the instructor. Each man places his hands on his hips, thighs, or knees so that his chin is just above the surface. He inhales quickly and deeply through the mouth only, lowers his face into the water at once, so that his eyes are just under the surface, then forcibly exhales all of the air in his lungs through his mouth and nose. Then he raises his head and inhales. Repeat until the men do this easily.

(6) Have the men line up 3 feet apart. Each man extends both arms in front of him upon the surface of the water. He inhales quickly and fully through the mouth, lowers his face into the water, holds his breath, and then shoves off from the bottom, allowing his body to stretch out fully upon the water. He maintains this position for a few seconds only and recovers to

the standing position before his forward momentum is lost. To recover to the standing position, he doubles his knees under his body and at the same time sweeps his arm downward. This brings the body to the upright position. He

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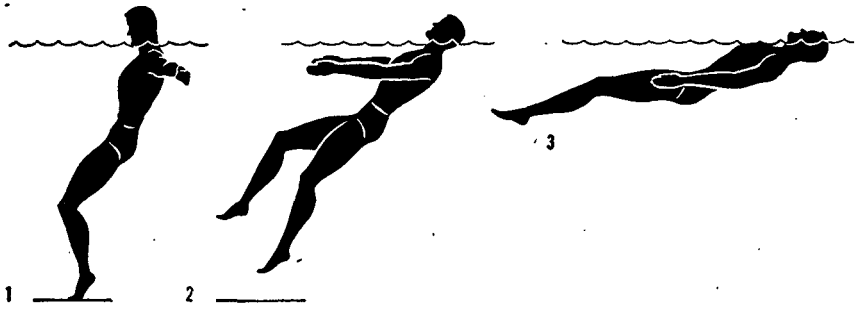
then extends his legs and stands up. This exercise should be repeated until each man can do it easily.

(7) This exercise is identical to the exercise in *(6)* above except that the man exhales fully under water, through his mouth and nose, when gliding forward. He recovers as soon as all his air is expelled. This should be repeated until each man can do it easily.

(8) Have the men line up about 3 feet apart. Each man inhales deeply, holds his breath, and shoves off from the bottom while lying back on the water with head drawn down against the chest and back straight. In this "floating" exercise, the arms lie loosely along the sides with the palms of



hands down. The entire arm is just beneath the surface of the water. This exercise should be repeated until each man can lie back on the water and glide comfortably for a few seconds. (Even men who cannot float motionless

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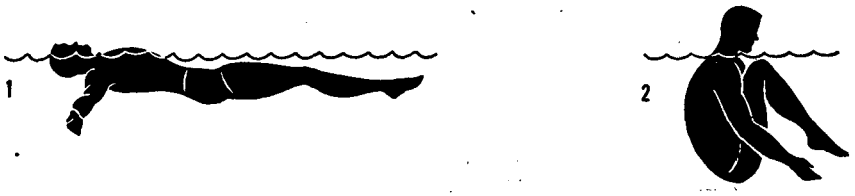
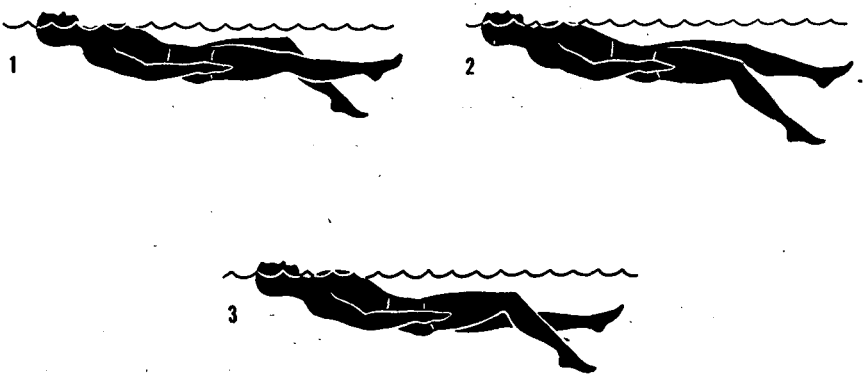
are able to glide flat in this position for a few seconds because of the body momentum along the surface.) To recover to the standing position draw up



the knees, round the back and lift the head forward. Do not attempt to stand until the tucked-up body settles to the vertical position.

(9) Have one man in each pair stand in water about 4½ feet deep and walk backward in the water, leaning backward, face out of water. His partner sees to it that his head does not sink beneath the water. After walking backward about 15 feet, he recovers. This is repeated with a sort of running, springing step. The man lies back in the water and kicks with the feet in a



kind of pushing movement, first forward, then downward. He kicks with the forward part of the sole of the feet first with one foot then with the other. This is similar to the kick of the back crawl stroke. When his speed slacks

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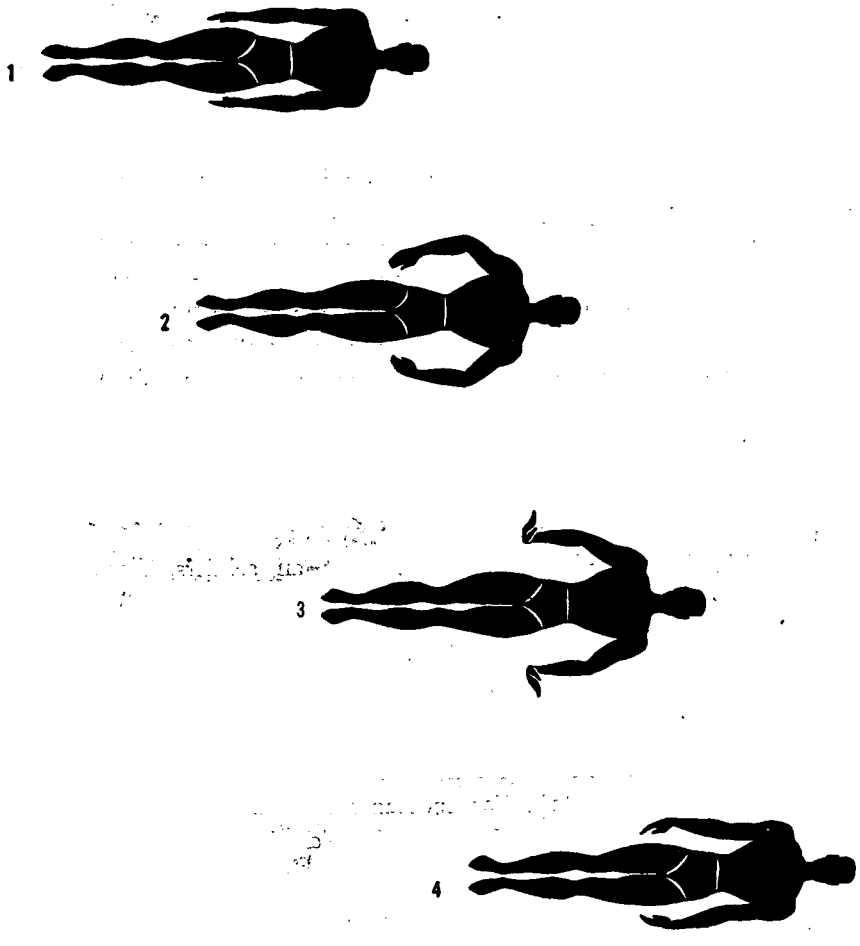
off, the man recovers his footing. If the water is so deep that floats must be used, the man lies on his back with the attached can and uses his legs as directed.

(10) The next step is to add a "finning" movement of the hands. This is a pushing movement of the hands which starts at about hip level and scoops the palms of the hands outward and downward towards the thighs.



(11) In all practice in the water, it should be strongly emphasized that the men should work as easily as possible.

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(12) Explain to them that since the human body is so buoyant, almost no effort is necessary to remain afloat. Instead, the effort should be made to propel the body forward through the water. Since the trunk is slightly higher in the water than the rest of the body, this forward propulsion results in the body's planing upward and forward.

(13) Explain that speed depends upon the amount that the propulsive force exceeds the resistance of the water. Hence, speed can be improved by increasing the propulsion force and also by reducing the resistance. To reduce the resistance, the body should be as straight and as streamlined as possible in the water.

(14) Strokes should be executed slowly enough and gently enough so that the swimmer can continue for a long time without fatigue. Using even a little too much force results in very rapid exhaustion.

117. INTRODUCTION TO THE TEACHING OF FUNDAMENTAL MILITARY STROKES. Military swimming will emphasize the strokes which result in staying power rather than those that emphasize speed. In military swimming, the soldier should swim easily, silently, and with adequate vision. He should cultivate strokes which will enable him to tow another man and to carry equipment as well as keep his face out of the water to breathe. The most important strokes are the elementary backstroke, the side stroke, and the breast stroke. The crawl and Trudgen strokes have little or no military usefulness, but may be taught to those wishing to use them for recreational or competitive swimming. Treading water should be practiced after the frog kick and scissors kick are mastered.

118. TEACHING TECHNIQUES. a. First test all soldiers, then classify them into homogeneous groups for instruction.

b. Arrange the men in the appropriate part of the pool, shallow end for the beginners (4½ feet), and deep end (6 feet) for intermediate and advanced swimmers. If there are few men, all will be able to push off in one group. If numbers are larger, the men count off by two's or four's, and one group will push off at a time (for example, all number one's push off first, then all number two's, etc.). For endurance swimming around the pool, arrange floats to mark the "tracks" around which the men swim. Arrange class so that all may hear and see.

c. Outline the program for the day.

d. Present the material as simply, clearly, and concisely as possible, then have the men practice. There should be little talk and much swimming.

e. Pair the men for mutual assistance. If possible, have the same men work together at every practice period.

f. If there are insufficient pools for adequate practice in the water, the

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instructor will institute intensive practice in dry land swimming (practicing the form of the various strokes out of the water). Some dry land instructions will precede water training in each stroke, even where the men are to get training in the water. The proper form for such instruction will be demonstrated in the discussion of each stroke.

g. The use of floats to teach nonswimmers or beginners is strongly recommended. The most useful floating device is the can (see par. 113c). These cans are strapped on the side of the body that is uppermost in the water. It will be strapped on the lower chest of the man learning the backstroke, on the back of a man learning the breast stroke, etc. The use of the float gives confidence, and the beginner strokes with much more skill. He can be told to stroke for a prolonged period of time—even half an hour. Thus, he learns the stroke easily through much repetition, conserving his strength and developing endurance while still a beginner. If floats are used, no attention need be given to the depth of the water and to segregating the various groups of swimmers; safety is readily secured. When the soldier can swim a quarter mile with the cans, he can be readily trusted to swim without them. If the instruction pool or stream has little shallow water, the use of floats is essential. If floats are used, the skill element of all fundamental strokes should be learned as rapidly as possible, merely mastering the elements of each before progressing to the next. The swimmer then changes from one stroke to another as he swims for prolonged periods of time, and he masters the strokes by innumerable repetitions.

h. A certain percentage of nonswimmers exhibit a fear of entering the water. It is best to ignore their complaints and to assume that they will learn to swim with the others. Frequently, simply placing them in the pool for half an hour, in water up to their necks accelerates their recovery from fear.

i. Treading water is a skill that parallels the learning of swimming strokes. It is a deep water skill and uses the same leg strokes as those used in the back and breast strokes. Hence, treading should be introduced when these strokes are taught. For details, see paragraph 126.

119. FLOATING. a. A large proportion of soldiers can be taught to float and this skill should be taught early. The first step is to ascertain whether or not the soldier is a floater. To do this, tell him to assume the position of the jelly-fish float (see par. 116b(3)). If he stays up, with any portion of his back above the surface, he is a floater. If he sinks, he cannot be taught to float, and must be taught to stay up by means of gentle arm and leg movements.

b. Most men are heavy legged, and cannot float in a horizontal position. To learn to float, stand in water about shoulder deep, take a full breath, lean backward gently, arch the back, tip the head backward, and raise the arms

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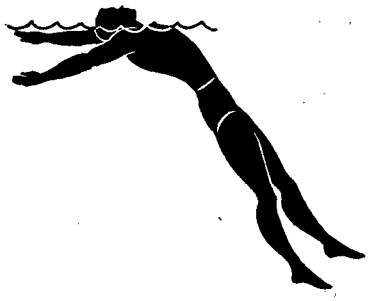
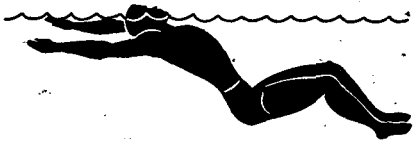
sideward and somewhat beyond the head. Then thrust the feet gently from the bottom and lie as relaxed as possible in the water. No attempt need be made



to float horizontally, as the legs will rise if they are buoyant enough.

c. If the feet will not remain off the the bottom of the pool, two things may be tried.

(1) Bend and separate lower legs and extend arms farther overhead in which case he may float satisfactorily.



(2) Move out into deeper water where it is possible to float vertically with only the face above water. This is not usually a satisfactory or comfortable position. Therefore, if it is impossible to float comfortably in the semi-horizontal or horizontal position, supplement the float with gentle arm or leg movements or both. The simplified leg movement is an alternate push with the soles of the feet. Extend the foot and push down from 8 to 12 inches. Then pull it back a bit with slightly bent knees, and again thrust

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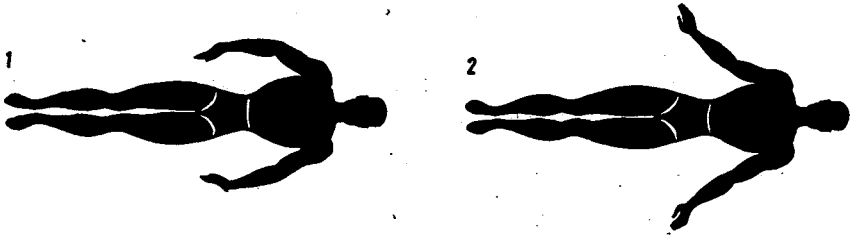
out. This movement is much like walking up stairs with feet close together. The appropriate arm stroke is "finning" (see par. 120).

120. FINNING. This is an arm movement which is used primarily on the back or in floating. First extend the arms along the sides. Then draw arms up about a foot and thrust the hands out and downward towards the feet in a pushing movement, supplemented by sort of fish tail flip of the hands and wrists. (See par. 116b(10).) This movement can be amplified into a sculling movement.

121. SCULLING. Lying on the back, start the sculling movement with the arms by pressing the hands outward with the wrist bent backward. The little finger is nearer the surface than the thumb. Then sweep the hands inward towards the thigh with the wrists still bent backward, but with the thumb



closer to the surface. The movement is with the hand and wrist primarily. The range of motion is from 14 to 20 inches. It is like sculling with an oar. There is little lost motion.

122. ELEMENTARY BACKSTROKE. This stroke is one of the most useful in swimming. With it the inexpert swimmer can swim for a longer period of time than with any other stroke. It has the further advantage that the abdomen can be kept very close to the surface, which is of great importance to soldiers swimming in water under bombing attacks.

a. Arm movement. The arm stroke of the elementary backstroke may be of one of two types:

(1) The best method for military swimming is to swing the straight arms sideward and upward, palms down, with the little finger leading, and slightly nearer the surface than the thumb. When the arms are just beyond the shoulder level, turn the palm toward the feet and pull sidewards and downward to the thighs. The upward sweep of this stroke retards progress slightly,

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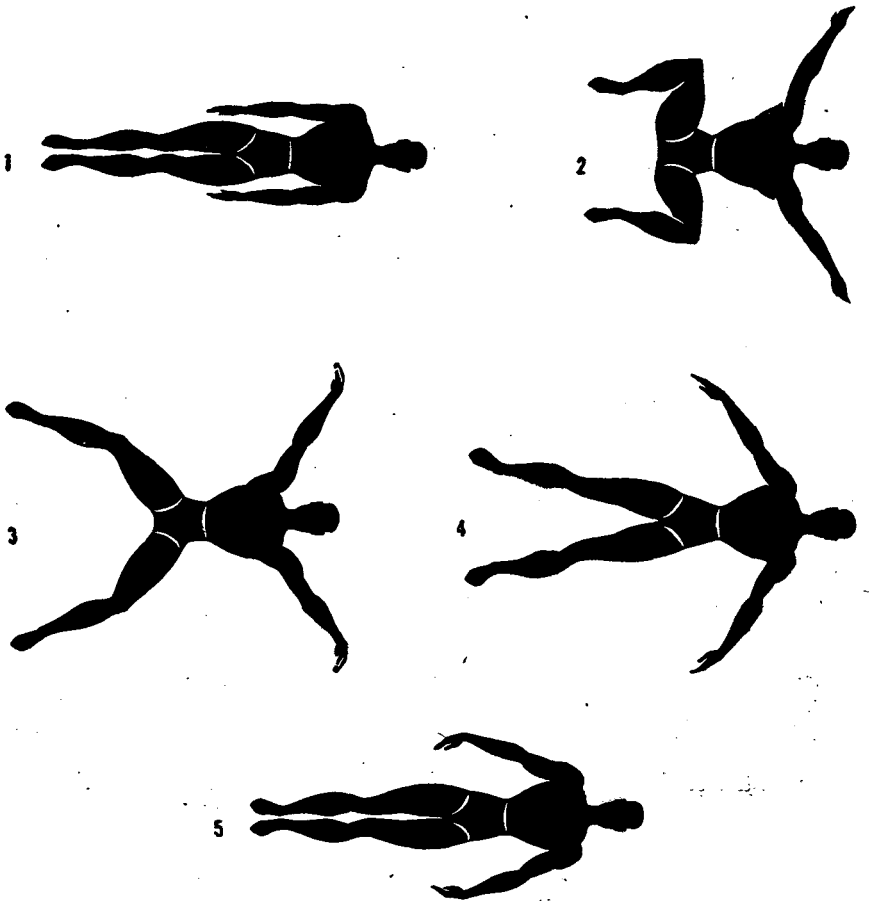
but it compensates by giving support to the back which, in military swimming, may be weighted down with a light pack, ammunition, metal helmet, etc.



(2) If the swimmer, in learning this stroke, tends to drop his hips, or if he is not weighted down with clothing or equipment, he may keep the elbows close to the sides, and perform a finning movement with his hands. (Par. 120.) The movement away from the body is exaggerated and is turned into a somewhat larger stroke. However, the stroke as outlined above in (1) is preferred and should be mastered as soon as possible.

b. Leg Movement The leg kick of the elementary back stroke is usually spoken of as the "frog kick". Start with the legs straight, knees separated sideways, and bent. Throw the feet outward and backward with a strong *inward* rotation of the hip joint. Then thrust the feet out sidewards to a wide

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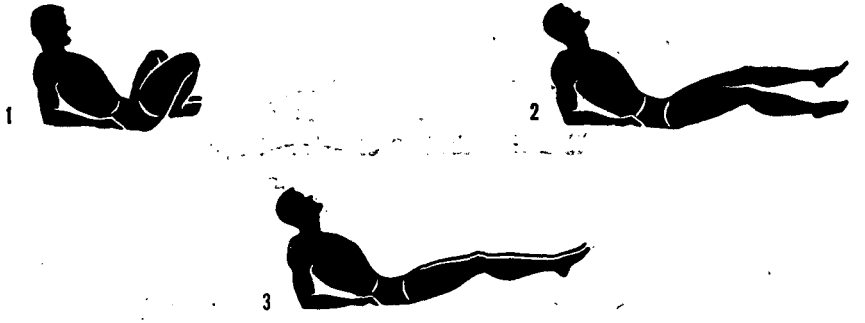
side-straddle position, with an accompanying *outward* rotation of the hip joint, until soles of feet face each other. Then bring the legs together forcefully. Do not raise knees any more forward than necessary. This is taught in four counts:

(1) The knee bend and leg separation.
(2) The leg extension.
(3) The pulling of the legs together.
(4) The glide.

The first three are later combined into one sweeping movement.

c. Coordination of arms and legs. In the elementary backstroke, start with arms by the sides and legs straight. Begin the preliminary movement of the arms and legs simultaneously and begin their stroking at approximately the same time. The leg stroke is completed earlier than the arm stroke; hence, the last part of the movement is with the arms. If the limited armstroke is used, the arms and legs finish at the same time. The swimmer then glides for several feet. Inhale through the mouth on the upward movement of the arms, and exhale through the mouth and nose on the downward movement.

d. Land Drills. Practice in the coordination of arms and legs should be given before the men go into the water. The arm strokes should be practiced both standing and lying on the back. The leg stroke may first be practiced seated on the floor, leaning backward, and supporting the trunk on the elbow. This way they can see their leg movements. The movement of one leg can also



be practiced while standing. If benches are available, each man may lie on his back on the bench and practice arm and leg movements at the same time. Standing, they can practice the movement on one leg and combine it with the arm movement.

e. Water drills. After men have developed confidence in the water and have learned to do the back glide, they should stand in water about 4 to 4½ feet deep, push off backward, and begin by finning or by using the sculling arm-stroke with the frog kick. Hips should be kept close to the surface. Head

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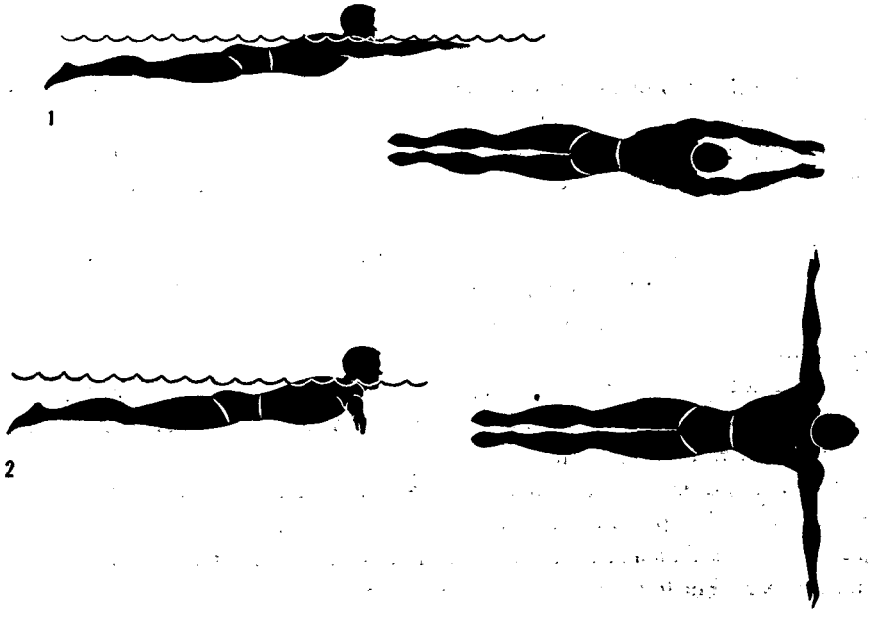
should not be so far backward that water runs into the nose. Arms should always be under water.

123. THE BREAST STROKE. This is one of the most useful strokes for military swimming. It provides good visibility and is not too tiring. It is useful in swimming through debris and oil-covered waters, for swimming with clothing on or with a load, and for pushing a tired swimmer along with the tired swimmer's carry. It is not an easy stroke to master, but it should be thoroughly learned.

a. Arm movement. The starting position is full extension in the water in the prone position. The head is up and the arms are pushed out ahead. Turn the palms outward and pull arms outward, sidewards and slightly downward until the hands are opposite the shoulders and slightly below them. Then slice hands into the front of the shoulders and bring elbows against the sides. Thrust arms forward, with palms down and slightly outward. The hands should be thrust straight forward from the shoulders.

b. The leg kick. This is much like the frog kick on the back (see par. 122b). Draw knees up sideward, rather than forward. Let the heels trail until they reach the limit of the upward motion of the knees, which is near the limit of a thigh "split". Then flex lower legs at the knees, lifting the heels higher than the hips. Thrust legs sidewards and outwards, and then squeeze them together. The soles of the feet should be facing as much as possible during the thrust and the squeezing action.



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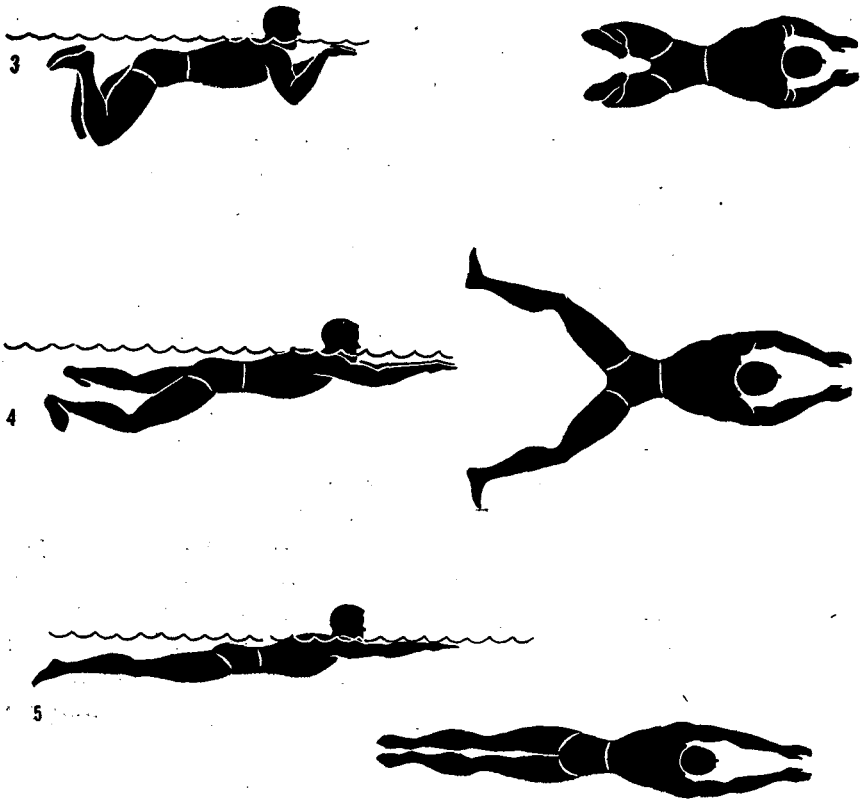

c. Coordination of arm stroke and leg kick. The whole stroke movement is in three counts.

(1) Begin arm pull, and near the finish of the pull, draw up the knees. The arm pull keeps the resistance created by the knees from slowing the swimmer's progress unduly.

(2) As the arm pull is finished, and the hands are thrust forward, kick out the legs and then pull them together.

(3) Glide through the water until the momentum begins to fall off, then begin the next stroke.

d. Breathing. It is possible to breathe at any time in the breast stroke, but the usual way is to inhale through the mouth with the arm pull, and exhale through mouth and nose during the finish of the leg kick and the glide.

e. Body position. In swimming for speed, the trunk and legs must be near the surface. This position, however, is tiring. Swimming with the trunk and legs projecting diagonally back and down at an angle of from 20° to 35°, is much slower, but is easier to sustain and not so tiring.

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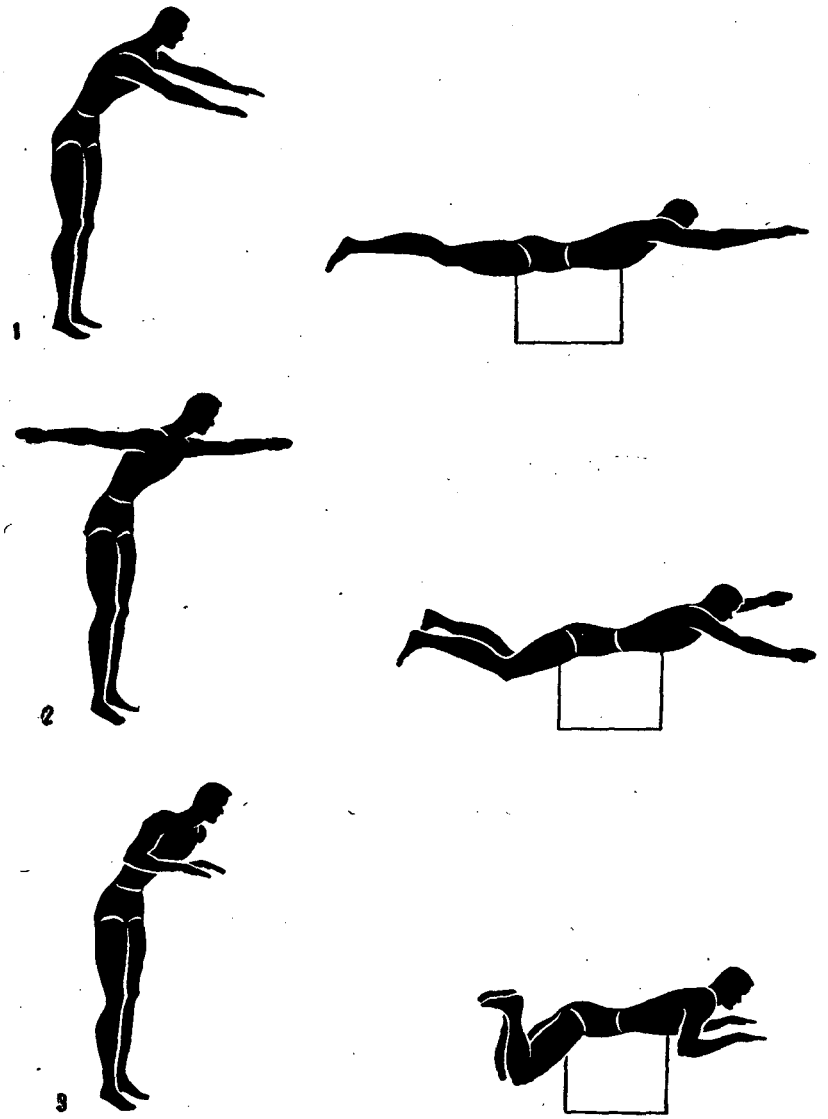
f. Land drill. In land practice, the arm movement can be practiced in a standing position, with the trunk bent forward 90°. If the men can lie on small benches, the whole stroke can be practiced. The leg kick can be prac-



ticed with one leg at a time, while standing, and combined with the arm stroke. Since the leg kick is so much like the backstroke frog kick the benefit of practicing the frog kick will carry over to the breast-stroke kick.

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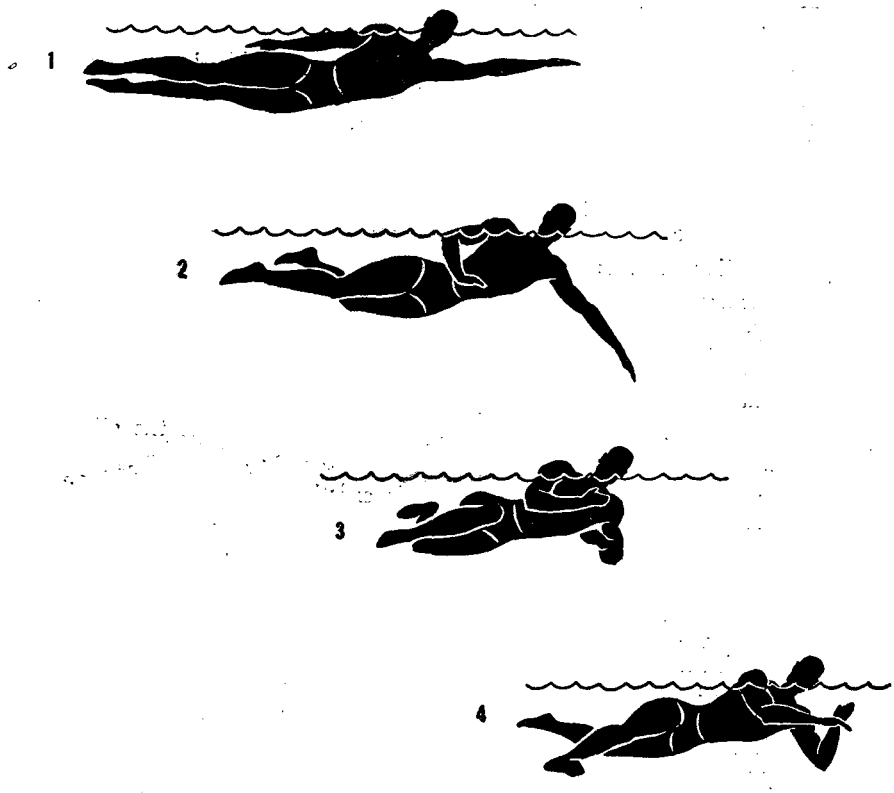
124. SIDE STROKE. This stroke is easy to learn and to swim. With slight modifications it can be used for carrying others or when one arm is injured, or to carry a gun with the top hand out of water. The swimmer swims on one side. Usually he begins on the side that feels most natural. After learning on that side, however, he should learn to swim on the other side as well. As described below the stroke is executed on the left side. Those who swim on the right side will reverse directions.



a. Arm stroke. The starting position is lying on the left side. The left arm is extended in line with the body and beyond the head. The palm is down. The right arm is extended backward by the right thigh. Pull the left arm downward with elbow straight, and continue until it is straight down from the shoulder. Then flex the elbow and pull into the side. At the same time turn the palm toward the face. Then thrust forward to the original extended position. Bend the right arm at the elbow. Thrust the right hand upward in front

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of the chest, then push forward and downward in front of the chin or face. Here the right hand catches the water and pulls backward to its original position by the right thigh. The right hand starts forward just in time to meet and pass the left hand at the neck or face. The coordination is as if the left hand were pulling a handful of water down and handing it to the right hand to carry it on to the end of its stroke.

b. The leg kick. This is the "scissors kick". First the feet are drawn up, with the right in front about a foot, until the knees are bent to a right angle. Then straighten the right knee and the right foot is thrust forward, downward, and backward in a semi-circular sweeping motion. At the same time the left knee is straightened and the left foot is thrust backward, downward, and forward in a sweeping motion, resembling a kick. The double leg stroke resembles the closing of a pair of scissors cutting through a large piece of water. The right foot presents the sole to the water during the thrust, then point the toes back during the backward sweep. The left foot is extended throughout the stroke. The legs come together at the end of the stroke and remain in line with toes pointed downward during the glide.

c. Coordination of arms and legs. From the position of left arm extended forward, right arm by the right side, and legs straight and together, begin the stroke with the downward pull of the left arm. As this arm pulls downward, start to thrust the right arm forward, and draw up knees to begin the kick. The catch and pull of the right arm and the kick of the legs coincide with the completion of the pull of the left arm and its thrust forward to the gliding position.

d. The overarm side stroke. This stroke is exactly like the ordinary side stroke, except that the right arm recovers above the surface, and is thrust into the water in front of the face. This stroke is somewhat faster than the ordinary side stroke, but sinks the swimmer deeper in the water. This necessitates that he breathe rhythmically, inhaling with the pull and kick, and exhaling, usually under water, with the glide. Besides this form of the stroke is somewhat more tiring, especially if the swimmer is clothed. It is useful swimming in rough water, however, and where more speed is required over a short distance.

e. Land drills. This stroke should first be practiced standing in a land drill. It can also be practiced on a bench. The coordination of the two arms is difficult at first and should be thoroughly understood before it is practiced in the water.

125. UNDERWATER SWIMMING. Underwater swimming is particularly useful for escaping strafing attacks by planes, or rifle or machine fire from the shore. It is also used when swimming beneath blazing oil. (See FM 21–22.) Two methods of underwater swimming are commonly used. These are identical with the breast stroke and the side stroke, except that the head is held straight forward.

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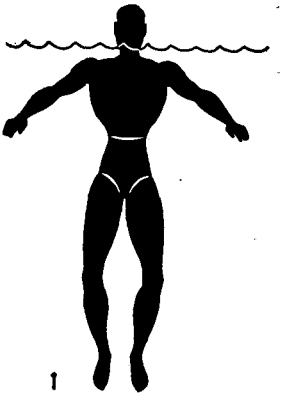
a. A variation of the side stroke is sometimes used. The pull of the right arm and the kick of the leg is identical, but the swimmer rolls somewhat on his face and performs a longer reaching stroke with his left arm. The stroke is halfway between the form for the side stroke and the Trudgen. (See par. 127.)

b. If swimming in water known to be clear of obstruction, a modification of the breast stroke can be used. In this stroke the arms pull clear through to the legs, and the glide is with arms by the sides. Usually, however, the arms should be ahead for protection.

126. TREADING WATER. a. As soon as a man masters the frog and scissors kicks and can swim the backstroke for 100 yards, he learns the methods of treading water. Those most commonly used are as follows:

(1) Stand erect in the water and use the frog kick exactly as in the elementary backstroke. If necessary, use the arms to fin or scull. (Par. 120, 121.)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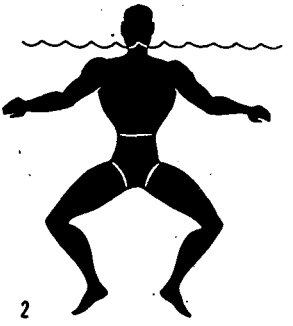
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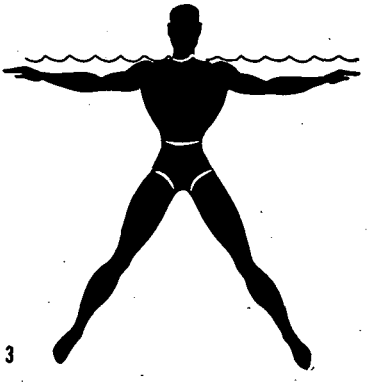
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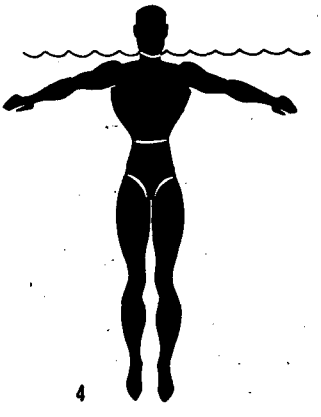
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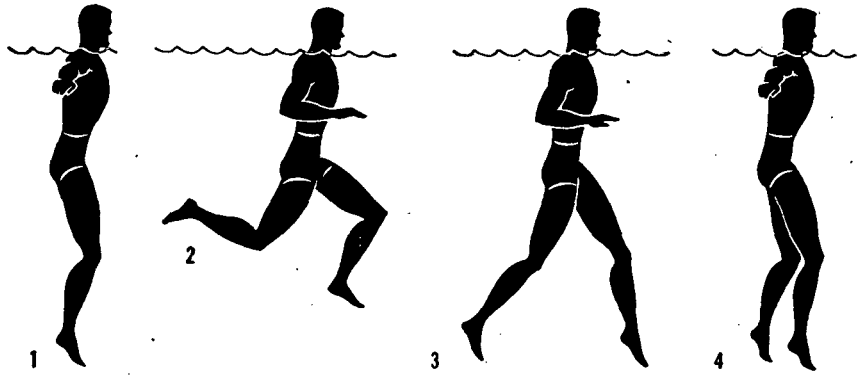
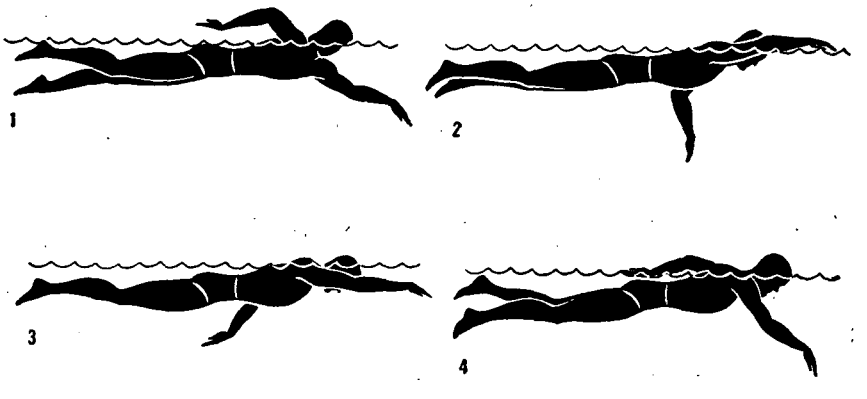
(2) Stand erect and use the scissors kick, either single or alternate (in the alternate kick, the left leg is forward in one kick and the right leg in the next kick). If necessary use arms to fin or scull at the same time.



(3) To stay afloat without using the legs, assume the position of the balanced or the vertical float, and scull with the hands.

127. TRUDGEN STROKE. This is the hand-over-hand stroke which is most useful as a military speed stroke. It is the easiest to teach after the strokes presented above. This stroke is like the over-arm side stroke, except that the body rolls from left to right, and back again. The axis of the shoulders is at an angle of about 45° to the water when the body is lying on the right side and chest, and at an angle of only about 20° to the water when the body is on the left side.



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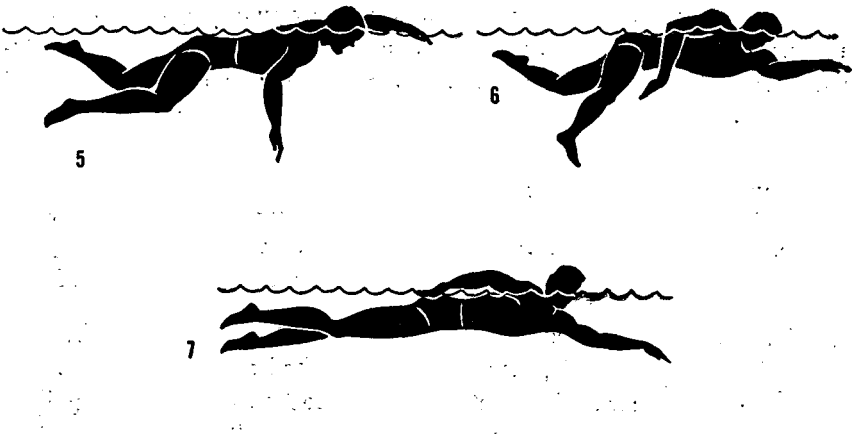

a. Arm stroke. Start with the body on the left side, legs together, and arms as in the side stroke. Withdraw the right arm from the water and swing it forward above the surface of the water. Bend elbow slightly, and lead with the back of the wrist. Place the right hand in the water, palm downward, directly in front of the head, keeping elbow only slightly bent. At the same time the left arm has been pulling backward through the water and has about passed the left hip. Now bring the right arm down with elbow bent about 30° to 40° from the straight line, until the hand comes under the midline of body. Then push back clear through to a position almost next to the right hip, then withdraw it from the water and begin a new stroke. The left arm stroke is the same as the right arm stroke and is timed to alternate with it. In slow swimming, each hand enters the water about the time the opposite hand passes the shoulder on the backward stroke. However, it does not begin to pull until the opposite hand passes the hip.

b. Leg kick. The leg kick is exactly the same as the scissors kick of the side stroke.

c. Coordination of arm stroke and leg kick. Begin the knee pull-up and the leg kick motion just as the right hand reaches in front of the right shoulder on its backward stroke. Complete the kick just as the right arm finishes the stroke and returns to the side. In swimming for speed, the arm motion is continuous, and there is practically no glide between strokes such as there is in the side stroke. In swimming for endurance, however, there is a rest in the position with the left arm forward, right arm backward, and legs together, and a short glide before the stroke is taken up again. The timing of this glide is exactly the same as in the overarm side stroke. The Trudgen stroke can be swum with the face in the water most of the time as in the crawl stroke. (See par. 128.)

128. FRONT CRAWL STROKE. This is not usually considered a military stroke. It is primarily a racing stroke, but can be used by experts for swimming

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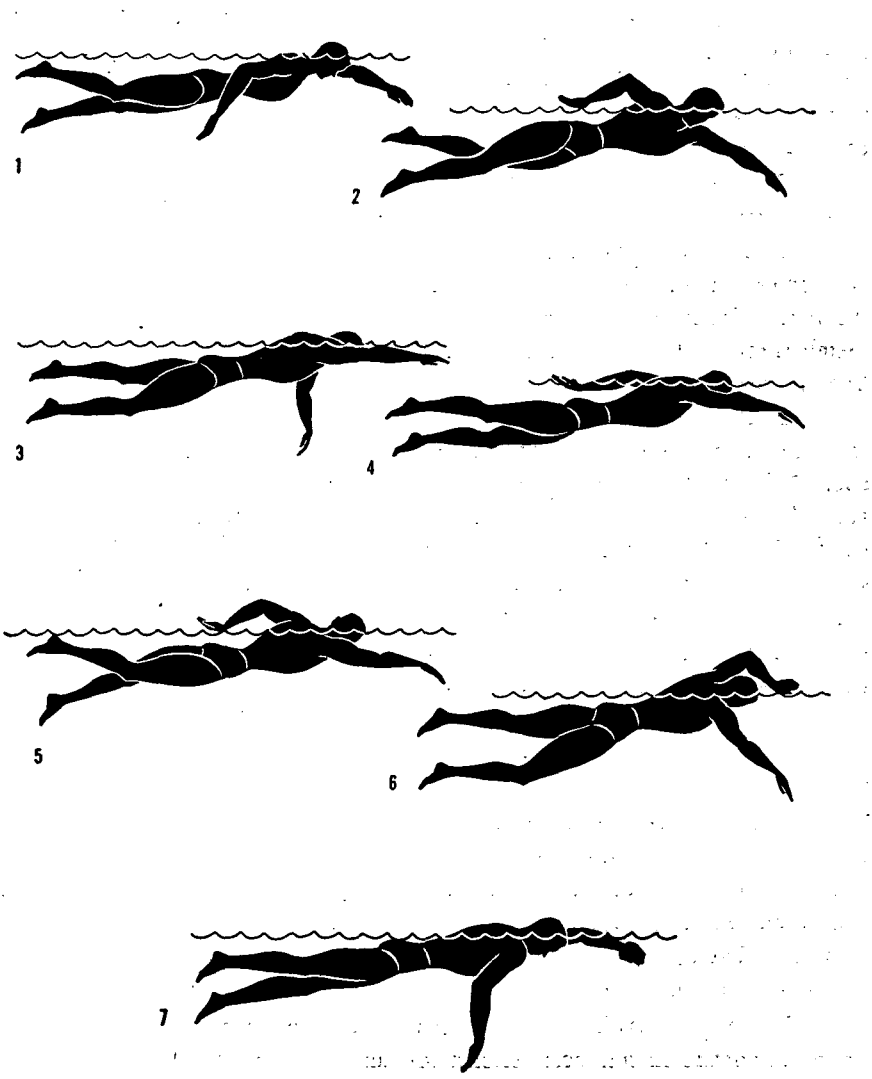
considerable distances. The arm movement of the crawl is easy to learn. The leg kick is very difficult to master in its best form, and is not useful for swimming with shoes on. It is included below primarily as a recreational stroke.

a. Body position and breathing. The body position of the crawl stroke is lying almost chest downward, and rolling slightly to each side. The face is kept in the water, about at the hair line, except when turning the head to inhale, or raising the head to look ahead. Inhaling may be done on either the right or left side. In the description below the swimmer will inhale on the



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right side. As the right hand comes out of the water, turn the head sharply to the right without raising it in the water, so that the chin is just forward of the right collarbone. Then inhale through the mouth. As the right hand enters the water, turn head to left and begin exhaling through nose and mouth. Finish the exhalation just before turning the head to the right again for the next inhalation. The roll to the left is not usually more than 20°; however, the roll to the right may be as much as 30°.

b. Arm stroke. The arms enter the water alternately just in front of the head. There are two commonly used forms of the arm stroke.

(1) This is the most commonly used form. Thrust the arm forward just above the surface of the water and out in front of the head. Let the arm rest in the water for a moment, just until the other hand is pulled out of the water. Then begin downward and backward stroke with the forward arm. This is the form used when swimming the crawl stroke for endurance, as it permits the coasting forward arm a moment of relaxation.

(2) The second form is used primarily for short distance sprinting. It is more powerful but more tiring than the form in *(1)* above. Thrust arm forward and downward into the water at an angle of 40° to 45° to the surface. Arm enters just in front of the ear. Make the catch the instant the hand enters the water. Thrust each arm in the water before the other arm has pulled completely through. In this way the forward arm is about 45° forward of a vertical line through the shoulder, the other arm is about 45° behind the vertical.

(3) Regardless of which of the forms of the arm stroke used, the pull of the hand should be directly under the center of the body, and the elbow bent about 20° from the straight line. When the hand passes the hip, withdraw the arm without completing the push backward to the thigh. The over-water recovery is much the same as for the Trudgen stroke. Throughout the arm stroke keep the palm of the hand as nearly at right angles to the surface of the water as practicable. That is, hook the wrist at the beginning of the stroke so the "paddle" surface of the hand is at right angles to the line of backward pull. Then adjust the wrist to keep the hand at right-angles to the surface of the water. This stroke is a sequence of "catch, press-and-pull, and push."

c. Leg kick. When the crawl stroke is being learned, the legs simply thrash up and down over a narrow range from the knees, with toes pointed, the purpose being primarily to streamline the body in the water and prevent the legs from sinking. In the crawl as swum by experts, however, the legs thrash up and down from the hip in a very loose-jointed manner over a range which seldom exceeds 18 inches. The knee is straight until almost at the top of the up-stroke. The sole of the foot is at an angle of about 40° to the surface of the water. As a leg starts its downward stroke, the knee bends about 30° to 35°. The toes point backward and inward as much as possible. The whole leg moves downward in this position until the knee is below the knee of the op-

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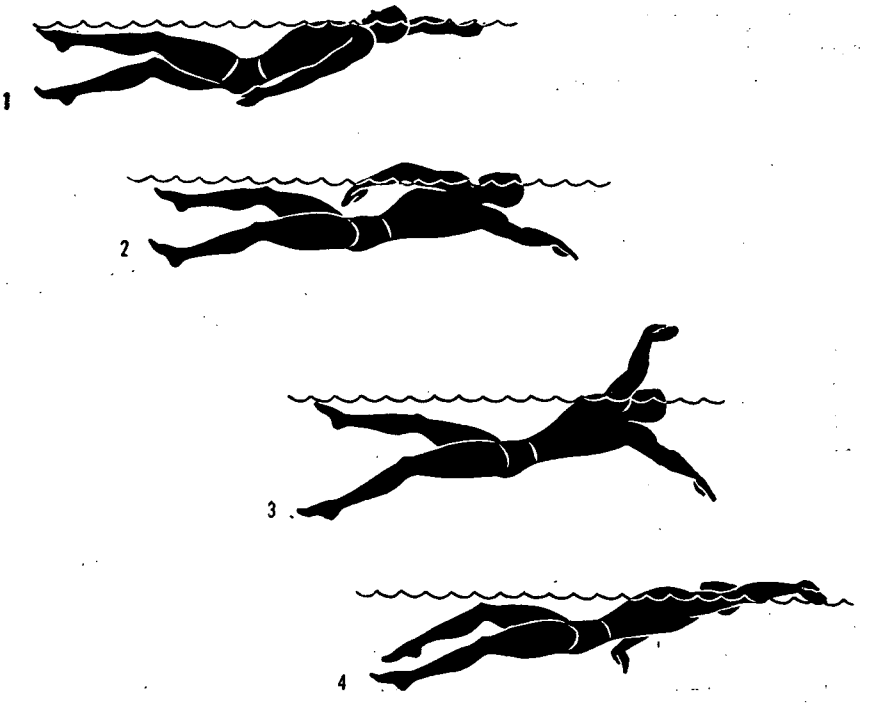
posite leg, then it is extended. In both the up-and-down strokes the legs are close together, the toes are "pigeon-toed", and the knee and ankles are relatively loose. There is as much propulsion from the upward thrashing of the lower foot as there is from the downward thrash of the upper foot.

d. Coordination of arm stroke and leg kick. In almost all crawl stroke swimming, the feet execute six kicks to each complete double arm-stroke. As the left arm starts pressing downward at the beginning of the stroke, the right foot starts its downward kick. As the right foot goes up the left leg starts its kick. This is followed by a right kick. Just as the right arm begins its pull, the right leg starts up and the left leg kicks downward. This is followed by a right kick and then a left kick.

129. BACK CRAWL. This is also a speed swimming stroke and not a military stroke.

a. Arm stroke. The position is on the back with arms extended at the sides. Lift each arm alternately and place it in the water straight ahead of the shoulder on the same side. Then draw arm sideward and downward to the hip. Keep the hand about 6 to 12 inches below the surface of the water and the elbow straight. Bend the wrist so that the palm faces the direction of pull.

b. Leg kick. See kick for the front crawl. (Par. 128c.)



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130. ENTERING WATER. In military swimming, the men usually enter the water either by walking or jumping in. There is very little diving. A shallow dive may be needed at times and surface diving should be mastered. Men should jump or dive only when any other entrance is impossible.

a. Jumping into the water. *(1) The stride jump.* Enter the water with one leg forward and the other backward, much like the position of the scissors kick. If jumping from a low height, spread the arms sideward to prevent the head from going below the water level.

(2) Jumping from a height. Jump feet first, holding the nose with the thumb and forefinger of the left hand, and covering the mouth with the palm. In jumping without a lifebelt, and not into burning oil, extend the right arm overhead to aid in balance. If jumping with a kapok life jacket, encircle the left arm with the right arm, and grasp the left shoulder, or the top of the life jacket near that shoulder, to prevent the jacket from being forced upward and breaking the neck. If jumping through burning oil, without a life jacket, hold the right elbow in front of the eyes to protect them, and grasp the left shoulder with the right hand.

b. Shallow dive. Occasionally it is necessary to enter water of unknown depth rapidly. In such circumstances it is advisable to dive very close to the surface. The need for this type of entrance may accompany sudden enemy firing. If reaching the edge of the water on the run, dive outward almost parallel to the surface and enter the water with arms overhead, thumbs locked together, finger-tips straight forward and palms down. Immediately upon entering, use the head and arms to control direction, whether upward or downward. An upward motion of the hands, arms, and head will result in a sharp rise to the surface. A downward motion will result in a deeper submerging.

c. Surface dive. When swimming on the surface, it is sometimes necessary to submerge quickly in order to swim under water. This may be done in two ways:

(1) Jackknife surface dive. Bend sharply at the hips, thrust arms overhead towards the bottom, and begin to swim with a breast-stroke motion towards

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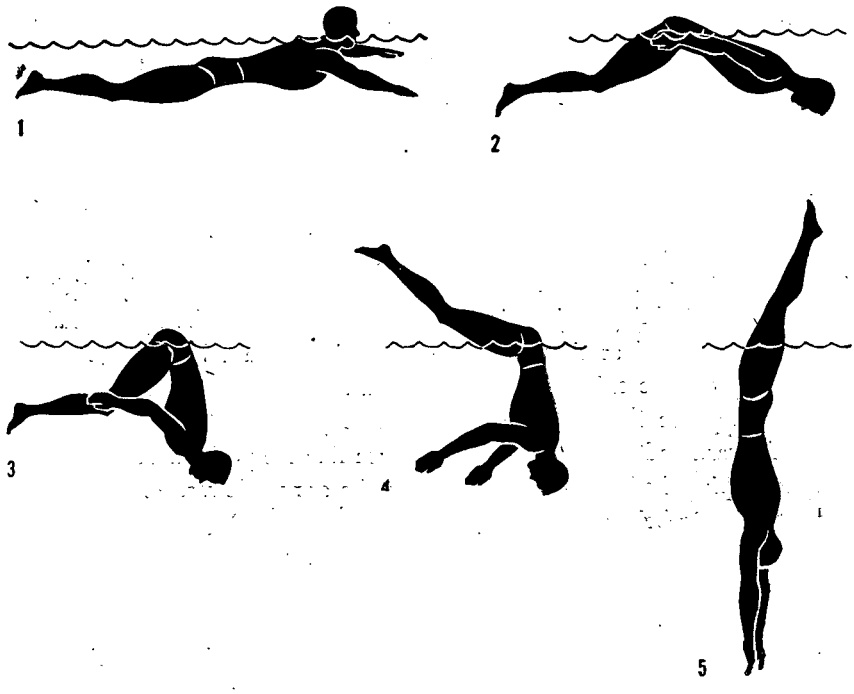
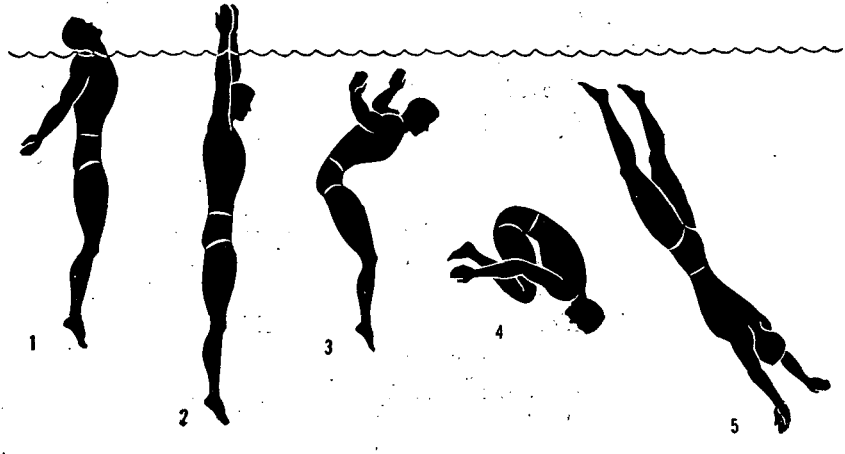
the bottom. This method is quick, but the legs usually project above the water as the swimmer submerges, and attract attention.



(2) Under-water surface dive. Drop the legs to the vertical with arms by the sides, and submerge with an upward double arm sweep. Then, bend forward and start swimming forward. This method is practically noiseless.



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Section II. LIFESAVING

131. LIFESAVING AND WATER SAFETY. In addition to knowing how to swim, every soldier should have a fair working knowledge of lifesaving and water safety.

a. The lifesaving motto: "1. Throw. 2. Row. 3. Go.", is the first thing taught. This motto means that a man should enter the water for a rescue only after he has exhausted all other possibilities. It should be repeated over and over again until it is firmly fixed in every man's mind. Frequently the would-be rescuer goes to the aid of a victim at once when other aids, such as ring buoys, heaving lines, poles, boats, etc., are readily available. All too often this error results in the drowning of both victim and would-be rescuer.

b. Although instruction in lifesaving and water safety should be given to all soldiers, only fairly strong swimmers can be expected to master the carries, release methods, and other phases of the water rescue work. Even fairly strong swimmers will frequently require special instruction in certain fundamentals, the mastery of which is prerequisite to lifesaving work. These fundamentals include the following:

(1) Strong scissors kick and strong frog kick.
(2) Ability to breathe easily even in rough water.
(3) Ability to surface dive to a depth of at least 12 feet.
(4) Ability to swim under water with eyes open for 40 or 50 feet.

132. APPROACHES. a. Rear approach. The safest approach to a drowning person is from the rear. Swim to a point directly behind and close to him;

quickly reverse your position in the water by drawing the knees up under the body and extending the legs forward beneath the victim. Lean backward and seize the chin of the victim by quickly shooting your hand forward over his shoulder and close to his neck. Cup his chin firmly in the palm of the hand, but take care not to apply pressure to the throat. Use the shoulder of the victim

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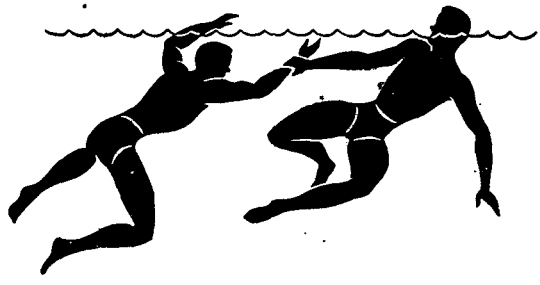
for leverage by resting your forearm upon it. Draw his head up and hold it securely against your upper arm and shoulder. At the same time, raise his body toward the horizontal by applying an upward pressure against his back with the elbow of your contact arm. Meanwhile, stroke vigorously with a scissors kick and your free arm. When the victim's body is moving along smoothly, shift him into a carry without losing contact with him in making the shift. (This method of approaching and getting under way is known as the "chin pull".)

b. Front surface approach. When it is impossible to approach from the rear, make a surface approach from the front. Swim toward the victim. Reverse positions as in (a) above. Reach in with your right (left) hand and grasp his right (left) wrist. Pull the victim toward you and at the same time swim forcibly away. This will quickly spin him around until his back is toward you. Then proceed as in (a) above.



133. CARRIES. An effective carry keeps the victim's face above the surface at all times, it must keep the victim's body at or near the horizontal position constantly. It must enable the rescuer to control the victim and at the same time allow the rescuer the greatest freedom of swimming movements consistent with his position of close bodily contact. Above all, the carry must permit the rescuer to assume a safe position in relation to the victim. The carries described below meet these requirements. Carries are preceded by a proper approach, reversal of position, and getting the victim under way as described in paragraph 132.

a. Cross-chest carry. From the chin pull position, reach over the victim's shoulder and across his chest with your free arm and grasp his side just below the armpit. Hold him so that your hip is directly under the small of his back, and the junction of his shoulder and head is tight under your armpit. Swim on your side using the scissors kick and the side arm pull. The side arm pull is executed by pulling the arm outward in a shallow sweep rather than deep in the water. The strokes should be short and rapid. The cross-chest carry should

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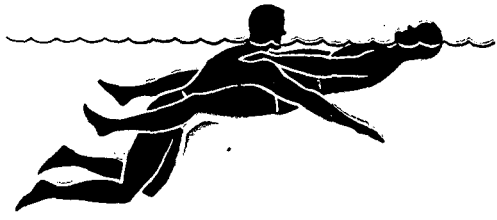
be mastered by all members of a lifesaving class because it is by far the most secure.

b. Hair carry. From the chin pull position, place your free hand on the crown of the victim's head, fingers toward his forehead, and grasp a handful of hair. Depress wrist, straighten arm, turn on your side, and tow the victim, using the side arm pull and scissor kick.

c. Tired swimmers carry. *(1)* In this carry, simply swim to the victim and tell him to lie on his back, place his hands on your shoulders with his arms straight and to spread his legs on either side of your torso. Swim the breast



stroke, using the frog or scissors kick and push the victim ahead of you. Watch his face for signs of discomfort or panic.

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(2) This carry is intended only for assisting a person who has become exhausted. It should never be attempted on a struggling person.

134. RELEASE METHODS. If the drowning person is struggling violently so that it is impossible to subdue him or to grasp him with safety, it is well simply to wait for him to exhaust himself before attempting to make contact with him. Never strike the victim under any circumstances. Breaking holds by inflicting pain is impracticable. It may work in practice, but a desperate man fighting for his life will not be affected by such methods. Practice the proper approaches to be able to use them in emergencies and thus avoid being caught in the hold of a drowning person. The following release methods are effective, but the use of the proper approaches will lessen the danger of being placed in such a position that the release methods become necessary. Each of the release methods is followed by the proper turn and the chin pull to get the victim under way. In all releases, first take a quick breath of air and then submerge yourself and the victim, effecting the release under water. This is done because a drowning person will release a hold more readily when submerged, his constant desire being to climb to the surface to obtain air.

a. Front head hold. In this hold you are grasped tightly around the head from in front. To release the hold, first tuck in the chin, take a quick inhalation of air, and submerge yourself and the victim. Press hands against his hips and push steadily and forcefully until the victim's body is pushed back and up to the horizontal position. Pull the head down with the chin tucked

in toward your shoulder. This will free you in most cases. If this does not free you and the victim's head is on your right side, bring your right arm up and over the encircling arm and place the hand securely against the victim's right cheek with the little finger laid against the side of the victim's nose and the thumb hooked under the jaw. Bring the left hand up beneath the victim's other

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arm and grasp it in a forking grip, thumb inside, just above the elbow. In one continuous movement, press the victim's head out and around with the right hand while the left hand lifts and presses the arm over the head and sweeping it across to the far side. Continue the pressing movement until the victim's back is turned toward you.

b. Rear head hold. In this hold you are grasped tightly around the neck from the rear. To break the hold, tuck in your chin, turning it towards his elbow so that his forearm will not be over your throat. Take a quick breath of air and submerge yourself and the victim. Grasp his lower wrist with your opposite hand (that is, his right wrist with your left hand), and the elbow of the same arm with your own hand. Twist the wrist so that the thumb is downward, push up on the elbow of that arm with your other hand and pivot inward. A little added pressure on the elbow will enable you to slip out

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of the hold and slide backward under the seized arm. Continue to apply pressure to carry victim's arm to a hammer lock position in the small of the back. Transfer the hand that is on the elbow to the chin and level off the victim as in the rear approach.

c. Double-drowning release. In this condition two people are clinging together, each with a front head hold. To release them, swim to a point directly behind one of them and place your hands on that one's chin. Raise one of your feet over their locked arms, placing your heel against the shoulder or chest of the farther victim. Straighten your leg, pushing the farther victim down and away, and pull the near one up, thus separating the two. (When pushing the farther victim down, avoid a kicking action

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with your leg.) Keep in contact with the subject you are now holding; go into a chin pull followed by a cross-chest carry; having rescued the first victim, go after the other one in any manner previously described.

135. DROWNING AND RESUSCITATION. Being under water for over 5 minutes is usually fatal, but an effort to revive the apparently drowned should always be made. It is very important that artificial respiration be started at the earliest possible moment after the patient has been removed from the water.

a. Lay the patient face down, force his mouth open, pull the tongue forward, and remove false teeth, juice, vomitus, or debris from his mouth and throat.

b. Raise him by the hips in order to drain the water from his lungs.

c. Lay him on his belly, preferably at a spot where his head will be lower than his feet. One of his arms should be extended over his head, the other bent at the elbow so that his face can be turned on the side and rest on the hand of that arm — fingertips coming to the edge of the mouth.

d. Kneel astride one of the patient's thighs, with one knee between victim's legs and placed at such a distance from his hips as will allow you to assume the proper position shown below. Place the palms of your hands on the small

of his back with your fingers on his lower ribs, your little fingers just touching the lowest rib, with your thumbs and fingers in natural position and the tips of your fingers out of sight just around the sides of his chest wall. The heels

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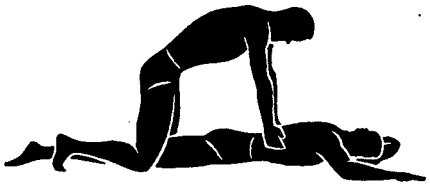
of the hands should be placed as far from the backbone as possible without slipping off.

e. With your arms held straight, swing forward slowly so that the weight of your body is gradually brought to bear upon the patient. Do not bend your elbows. Pressure should be enough to press air out of lungs but no more. This



operation should take about two seconds. Count, "one thousand and one, one thousand and two."

f. Now immediately swing backward so as to remove all pressure completely and suddenly. Count, "one thousand and three, one thousand and four."

g. Now, repeat the operation. The cycle of compression and release should take about four seconds and should be repeated at the rate of 15 times per minute.

h. Continue the operation without interruption until natural breathing is restored, or until the subject is unquestionably dead. Because many patients have died when artificial respiration was stopped too soon, the operation should be continued for two hours or longer.

i. Aside from the resuscitation, the most valuable aid that can be rendered is keeping the patient warm. After artificial respiration has been started, have an assistant loosen the clothing and wrap the patient in any covering that is

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available. Use hot bricks, pads, heaters, or similar means, but be sure the person is not burned by your treatment.

j. When the patient revives, he should be kept lying down and not allowed to stand or sit up; this will prevent a tendency to faint. Stimulants such as hot tea or coffee, or aromatic spirits of ammonia, may be given as soon as the patient is perfectly conscious.

k. At times a patient, after temporary recovery of respiration, stops breathing again; aritficial respiration should be resumed at once.

l. Because of the length of time this operation may have to be kept up, more than one operator may be necessary. A change of operators can be made without loss of rhythm or respiration. If this point is remembered, no confusion will result when the change occurs and the respiratory rate could well be kept even. The great danger is stopping artificial respiration too soon. In many cases, breathing has been established after 3 or 4 hours of artificial respiration, and there are many instances where normal breathing has been reestablished after 8 hours. The ordinary and general tests for death should not be accepted; a medical officer should make several careful examinations at various intervals, before the procedure is allowed to be stopped.

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CHAPTER 16

POSTURE TRAINING

Section I. GENERAL

136. PRINCIPLES OF POSTURE TRAINING. There is no one "best posture" for all men because the physical architecture of individuals differs according to the bony structure they inherit. Therefore, to develop the best posture for each member of any given group certain general principles must be applied intelligently to the group as a whole as well as to each man. These principles are:

a. To teach the characteristics of good posture.

b. To provide an opportunity to "feel" or practice good posture.

c. To have the men practice proper posture until it feels more comfortable than poor posture.

d. To motivate the men to acquire it as a habit.

137. CHARACTERISTICS OF GOOD POSTURE. The first step in posture training is to teach what good posture is. Many men have a misconception as to what constitutes good posture. For example, they arch the lower back, thrust out the chest and retract the shoulders in an exaggerated manner, or they spring their knees backward. The characteristics of good posture are head balanced and erect, chest held high without tension, abdomen flat, shoulders back and relaxed, lower back only slightly curved, and knees straight but not stiff. Instructors should explain and demonstrate the position of the various parts of the body in proper posture.

138. TRAINING FOR GOOD POSTURE. The men must be provided with opportunities to feel and to practice good posture. Many individuals feel more natural while maintaining a bad posture. Certain muscle groups must have special training to maintain good posture without undue fatigue. The exercises in section II below will provide this training. The emphasis upon proper posture must not be confined to physical training periods only. A good military bearing must be insisted upon until the men assume it from habit.

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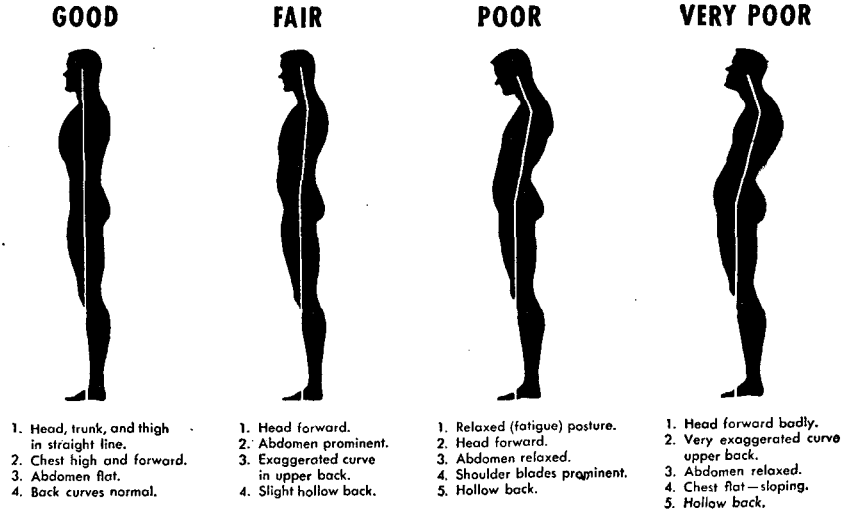
139. MOTIVATING GOOD POSTURE. Regardless of the amount of exercise and instruction they get, men habitually assume good posture *only if they want to*. That is why motivation is so important.

a. At the beginning, a short talk should be given, illustrated if possible, on reasons for cultivating good posture. Good posture has many values for the soldier. First, a soldier is often judged by his appearance — the man with good posture looks like a soldier, he commands attention. Secondly, it is an accepted psychological fact that good posture is associated with good morale — a man with a good posture feels better and is more positive. A man with poor posture cannot feel as positive, consequently he may develop a negative and discouraged attitude. Thirdly, good posture permits the body to function most efficiently. This is because the opposing muscle groups balance, thus maintaining the bony structure in a balanced position. The correct bony alignment provides for the correct positions of the internal organs. The correct positions of the organs assist them in the performance of their various functions. Less strain and tension is placed upon bones, muscles, ligaments and organs.

b. The instructors should always be excellent examples of good posture. They must be enthusiastic about it and "sell it" to the men. Men with excellent posture should be complimented. They should be reminded when they exhibit poor posture. This should be done without nagging, and with humor, if possible.

c. Visual aids should be utilized. A few pictures of good posture and a few signs at familiar places will remind the men to emphasize good posture. These help to motivate many of the men.

d. Posture judgments help to motivate the men. The four posture silhouettes below are highly valid standards by which to make such judgments. It



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takes a few minutes to judge 100 men, especially if they are inspected in small groups. A good place to do it is when they are at the posture boards (see par. 62a). They should also be judged occasionally when off guard. Announcing the platoon with the best average posture may stimulate friendly rivalry.

Section II. POSTURAL EXERCISES

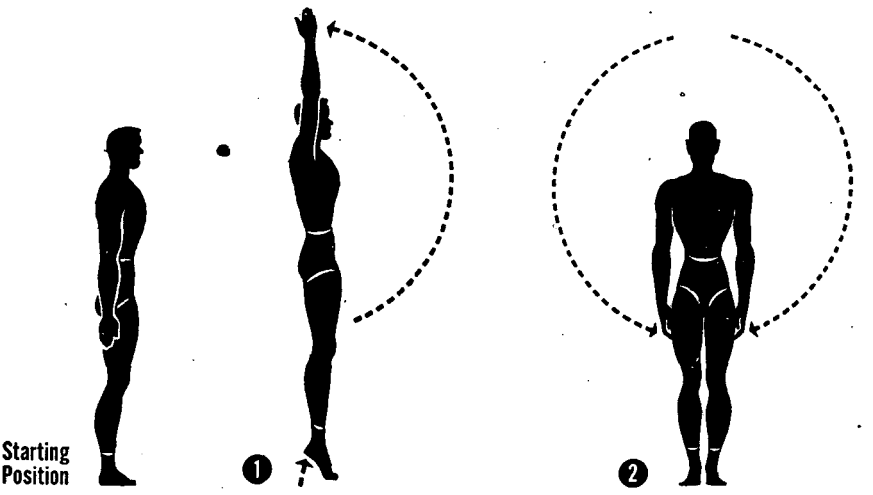
140. GENERAL. The ten exercises below are designed to develop the postural muscles. All of these exercises have SLOW CADENCE and two-count movements. They are especially valuable for use in the "strength course". (See par. 62.)

EXERCISE 1:

Starting Position. Attention.

Movement.

(1) Swing arms forward and upward to full stretch overhead and at the same time rise high on toes.



(2) Swing arms sideward and downward slowly and press back hard. At the same time retract chin and let heels drop to the ground. Avoid an exaggerated arch in lower back.

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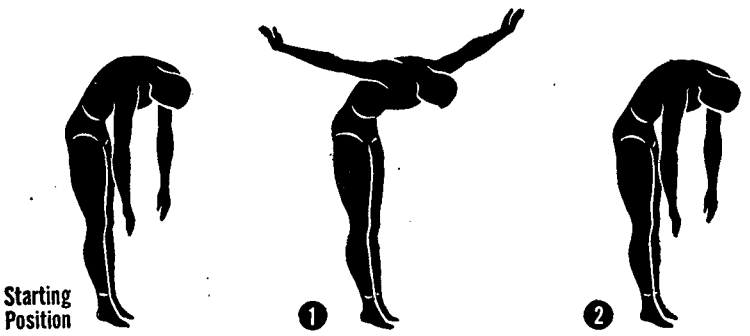
EXERCISE 2:

Starting Position. Trunk leaning forward about 60°, arms hanging downward loosely from shoulders.

Movement.

(1) Swing arms sideward and backward vigorously, retracting chin forcefully and flattening upper back. Hold this position momentarily.

(2) Recover to starting position.



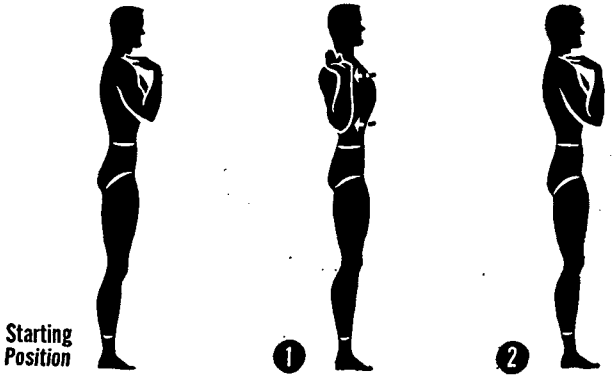
EXERCISE 3:

Starting Position. Standing, fingertips touching shoulders, arms in front of chest, and elbows downward.

Movement.

(1) Move upper arms outward and backward, with elbows hugging sides. Hold the position a full second while trying to force arms further around and back. At same time, retract head and attempt to stretch upward.

(2) Recover to starting position.



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EXERCISE 4:

Starting Position. Kneeling on the mat, trunk bent sharply forward, hands behind head.

Movement.

(1) Still leaning forward, straighten upper back and press elbows and head backward. At the same time pull in chin.

(2) Recover to starting position.

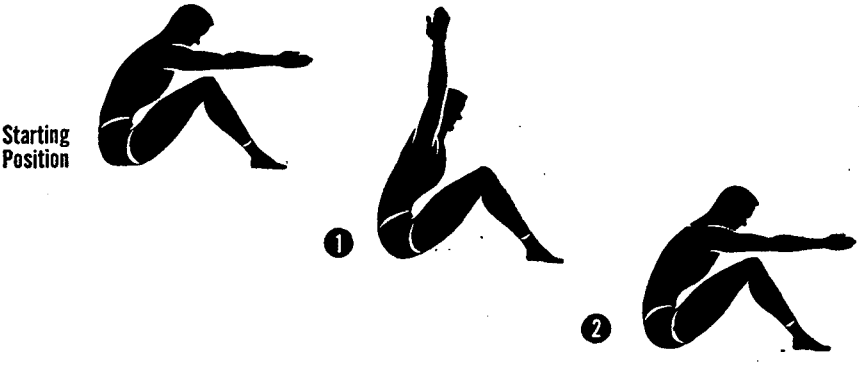
EXERCISE 5:

Starting Position. Sitting on the floor, knees raised, trunk bent forward, and arms stretched forward.

Movement.

(1) Still leaning forward, swing arms upward and backward. At the same time pull in chin.

(2) Recover to starting position.



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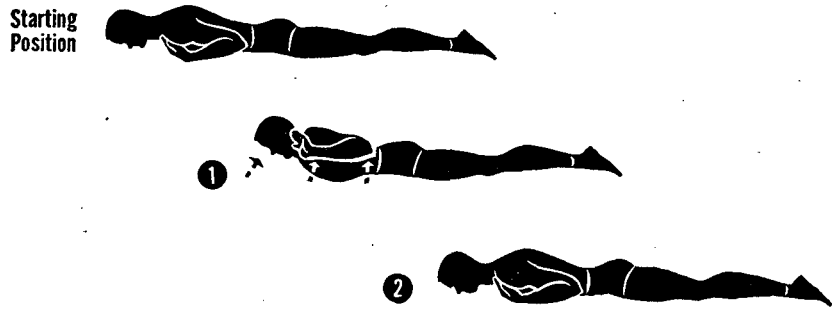
EXERCISE 6:

Starting Position. Lying face down on the floor, with elbows at sides and fingertips on shoulders.

Movement.

(1) Rotate arms outward and pull elbows in hard to sides. At the same time pull in chin and lift head about 6 inches from the floor. Hold this position a full second.

(2) Recover to starting position.



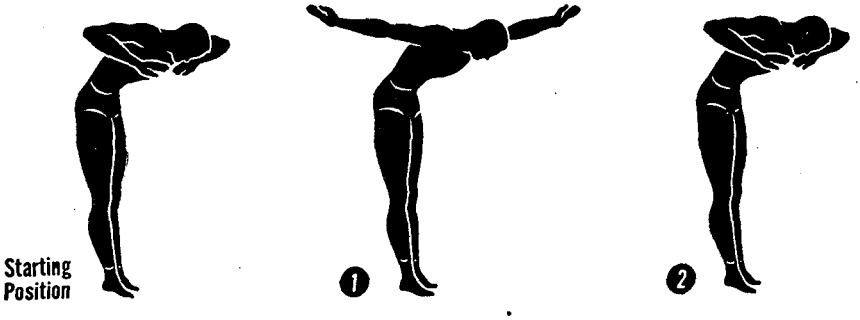
EXERCISE 7:

Starting Position. Bending forward about 45°, elbows horizontally sideward from shoulders, forearms bent forward, palms down, thumbs just in front of shoulders.

Movement.

(1) Straighten elbows and swing arms slowly but hard sideward and backward. At the same time retract head.

(2) Recover to starting position.



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EXERCISE 8:

Starting Position. Leaning slightly forward, elbows bent, and fingertips touching shoulders.

Movement.

(1) Make small circles about a foot in diameter, elbows circling upward and backward. Press arms backward and retract head. Movement is slow.

(2) After completing sufficient repetitions, recover to starting position.

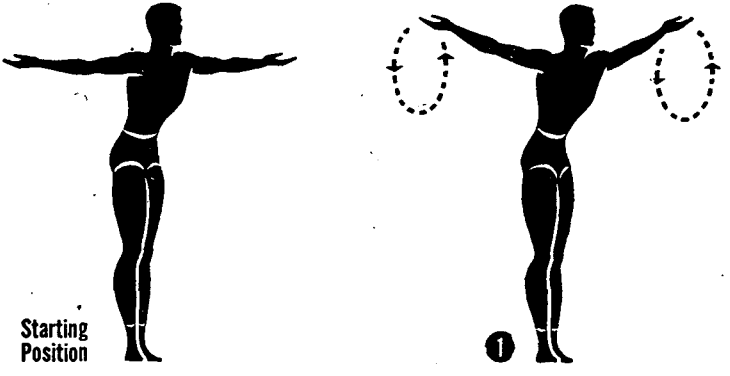
EXERCISE 9:

Starting Position. Leaning slightly forward, arms horizontally at sides, palms up.

Movement.

(1) Make small circles about a foot in diameter, hands circling upward and backward. Press arms backward and retract head. Movement is slow.

(2) After completing sufficient repetitions, recover to starting position.



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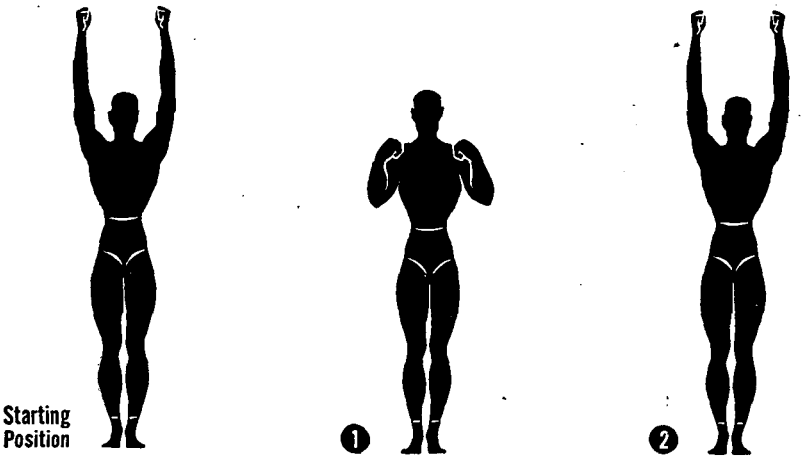
EXERCISE 10:

Starting Position. Arms overhead.

Movement.

(1) Pull arms slowly downward until fists are beside shoulders. Pull as though chinning.

(2) Recover to starting position.



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CHAPTER 17

PHYSICAL FITNESS TESTING

141. VALUES OF PHYSICAL FITNESS TESTING. a. The results of the physical fitness test enable the physical training instructors to ascertain the physical condition of the men at the time tested. At the beginning of the program of training, this enables the instructors to determine how intense a program of physical conditioning is necessary.

b. Tests serve the instructor as a means of measuring the progress of his unit and of evaluating the effectiveness of the training.

c. Tests serve to indicate to the instructor the specific needs and deficiencies of individual men who may require special instruction or corrective work.

d. Tests motivate the men to improve their physical condition. Frequently men do not realize what poor condition they are in. When the tests reveal their deficiencies, they are much more receptive to an intensive physical training program in order to remedy their shortcomings.

e. Tests frequently lead to an intensification of the physical training program by revealing to the commanding officers the poor condition of their men.

142. CRITERIA FOR SELECTING TEST EVENTS. a. For military purposes tests selected should measure the various factors in physical fitness which are essential to military fitness. The most important of these are muscular strength, muscular endurance, circulo-respiratory endurance, agility, and coordination.

b. Test events should be selected which require a minimum of equipment. Necessary equipment must be easy to procure and set up.

c. Test events should be capable of administration with a maximum economy of time.

d. Test events which are dangerous to the unskilled or poorly conditioned men should not be included.

e. Test events used should depend as little as possible upon previously learned skills. The purpose of physical fitness tests is to measure the various components of physical fitness, not to measure acquired skills.

f. Test events should be such as can be scored on a point table. When tests are scored with points, men are strongly motivated to improve their scores.

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Competition between men and units is increased. In addition, point scores help present a better index of an individual's total physical fitness.

g. The test in its entirety should be such as to distinguish clearly between fit and unfit individuals. Test results obtained from fit groups should be consistently better than those obtained from poorer groups.

143. TEST BATTERY. Two batteries of test events which adequately meet the criteria in paragraph 142 are listed below. The first battery is recommended when the test can be administered on a dry level field which is of sufficient size to conduct the 300-yard run. The second battery which is used when testing cannot be done outdoors, is identical with the first except for the last event, and its alternate, which are indicated below as 5A and 5A(1). (See par. 145.)

OUTDOOR TESTS	INDOOR TESTS
1. Pullups	1. Pullups
2. Squat Jumps	2. Squat Jumps
3. Pushups	3. Pushups
4. Situps	4. Situps
5. 300-Yard Run	5A. Indoor Shuttle Run
	5A(1). 60-Second Squat Thrusts

144. PREPARATION OF MEN FOR TESTING. a. The men should be given seven or eight periods of physical training before they are tested. This procedure will reduce injuries and will provide an opportunity for teaching the men the correct form for executing the various test events. Care must be taken that the men are not handicapped by muscular stiffness and soreness when they take the tests.

b. In the physical training program much stress is placed upon running. Frequently, however, this type of running is purely the usual military double timing which is adapted to economy of effort but not to speed. Therefore, the men should, in addition, be given instruction and practice in sprint running. (See par. 71.)

145. RULES GOVERNING TESTS. The first four tests below are part of both the indoor and outdoor batteries described in paragraph 143. Test 5 completes the outdoor battery. Test 5A or its alternate, Test 5A(1), completes the indoor battery.

TEST 1: PULLUPS

This event requires a horizontal bar. This may be made of a pipe or gymnasium horizontal bar, or other rigid horizontal support which is not over

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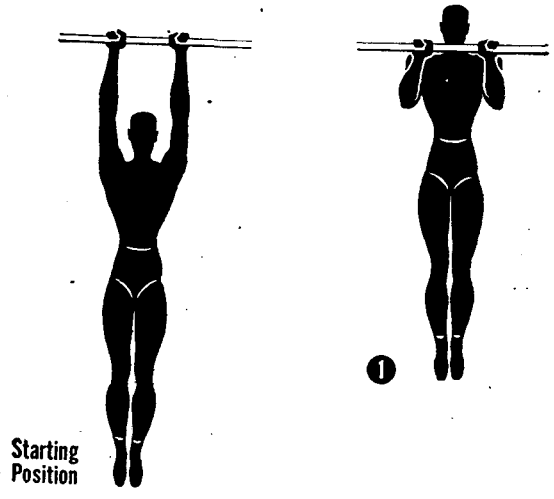
1½ inches in diameter. The bar should be high enough to permit the performer to hang at full length without touching the ground. A height of 7 feet, 9 inches to 8 feet is recommended.

Starting Position. Hanging at full length from the bar with arms straight. The forward grasp is used with the palms turned away from the face.

Movement. Pull up until the chin is above the level of the bar. Then lower the body until elbows are completely straight. Continue for as many repetitions as possible.

Instructions. The men should be told that it is permissible to raise the legs and flex the hips when pulling up but not to kick or execute a jerking motion with trunk or legs. The body must be kept from swinging. The chin must be



raised above the bar. The arms must be completely straight at the bottom of the movement.

Administration and Scoring. Each time the performer pulls his chin above the bar in correct form, he is given credit for one pullup. He is not credited with a pullup if he fails to raise his chin above the level of the bar or if he stops to rest. If the performer does not straighten his arms at the bottom of a movement, if he kicks or jerks, only half a pullup will be counted. If there are four half-pullups, the performer should be stopped and retested later. If the performer starts to swing, the judge should stop the swinging with his hands. Some such aid as a resin-bag or a cake of magnesium carbonate should be available to prevent the hands from slipping.

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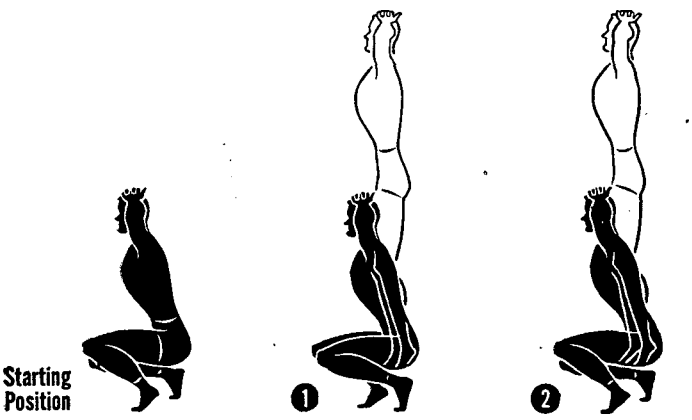
TEST 2: SQUAT JUMPS

Starting Position. Squatting on right heel with fingers laced on top of head, palms down. The feet are 4 to 6 inches apart with the heel of the left foot on a line with the toes of the right foot.

Movement. Spring upward until both knees are straight and both feet clear the ground. Jump just enough to permit straightening the knees without touching the ground. Do not jump any higher than necessary to accomplish this purpose. Keep the upper body fairly erect. While off the ground reverse the posi-



tion of the feet bringing the right foot in front. Then drop to a squat on the left heel. Spring up again and continue for as many repetitions as possible.

Instructions. The men should be told that the most common errors are: getting the feet too far apart, forward and backward, and failing to squat down on the rear heel. The correct position should be demonstrated clearly, and the men should be given sufficient practice to master it. The action must be continuous throughout. Before beginning the event the men should be told that it involves courage to almost the same extent as it requires strength and endurance and that they should not give up until they cannot make another movement.

Administration and Scoring. The performer is credited with one squat jump each time he springs up from the squat to the erect position and returns. The movement is not scored if he fails to descend to a complete squat, if he does not straighten his legs completely and reverse his feet while he is in the air, if he removes his hands from his head, or if he discontinues the movement

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and comes to a stop. If he loses his balance and removes a hand from his head momentarily, or falls but immediately recovers and continues, he shall not be penalized. If the performer gets his feet too far apart but comes to a squat on the rear foot, there is no penalty. Some men cannot squat all the way down on the heel. If they go down as far as possible they should not be penalized.

TEST 3: PUSHUPS

Starting Position. The performer assumes the front leaning rest position with the body straight from head to heels. His palms are directly underneath the shoulders and elbows are straight. The judge sits on the ground beside the performer, with one palm down on the ground underneath the lowest part of the performer's chest.

Movement. Lower body until chest touches the ground (in informal practice), or touches the hand of the judge (in formal testing). Return to the original position by straightening elbows. Keep the entire body in a straight line throughout. Repeat as many times as possible.

Instructions. The performer is told: that the arms must be straight at the start and completion of the movement; that the chest must touch the judge's hand; and that the stomach, thighs, or legs must not touch the floor. He is also told that the whole body must be kept straight as he pushes the shoulders upward; that is, the shoulders should not be raised first, and then the hips or vice versa. The judge uses his free hand to guide the man in case he is raising his hips too much or raising his shoulders first. In the first instance he taps the man on the top of the hips to straighten them out; in the second case he taps underneath the abdomen to make him raise his abdomen with the same speed as his shoulders.

Administration and Scoring. The performer is credited with one pushup each time his arms are completely straightened and the exercise is performed in acceptable form. There is no penalty for the hips being slightly out of line if the whole body is moving upward at about the same speed. The men may proceed but may not stop to rest. If a man violates any of the instructions given above, he is credited with a half-pushup.

TEST 4: SITUPS (In 2 minutes)

Starting Position. Performer lies on his back with knees straight, feet approximately 18 inches apart and fingers laced behind head. The scorer kneels on the ground at the performer's feet and presses the performer's ankles firmly down against the ground.

Movement. Raise upper body rotating it somewhat to the left, and then for-

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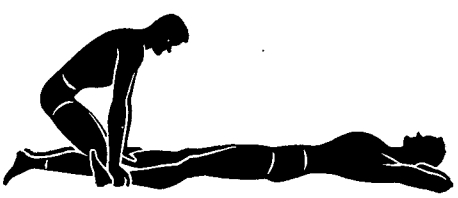
ward far enough to touch the right elbow to the left knee. The knees may bend slightly when sitting up. Lower the body until back again touches the ground. Again sit up, but this time rotate trunk to the right and touch left elbow to the right knee. Again lower body until back touches the ground. Perform as many situps as possible in two minutes. Rest pauses are permitted during the test but count toward the 2-minute period.



Instructions. The performer should be warned that he must keep his knees straight until he starts to sit up; that he must touch his knee with the opposite elbow; and that he may not push up from the ground from his elbow.

Administration and Scoring. Performer is given credit for each situp completed within the 2-minute period. No score is given if he unclasps his hand from his head, if he pushes up from his elbow, or if he keeps his knees bent while lying back on the ground. He is not penalized if the elbow misses the knee slightly. He must, however, sit up far enough so that the elbow almost touches the knee. Time should be announced every 20 seconds. At the end of 2 minutes the timer calls: STOP and the judge counts the full number of sit-ups completed before the stop command.

TEST 5: 300-YARD RUN

A course 60 yards long is laid out on flat level ground with lanes 4 feet wide for each runner. Both ends of the course have cross-marks at right angles to the lanes. The cross-mark at one end serves as a starting line; the one at the other end, as a finish line. In the middle of the cross-mark at either end of each lane is a stake which is at least 1½ feet high. If possible the lanes should be marked out in lime. If there are no lanes, it is recommended that the stakes be numbered or painted different colors. Each performer must run around his stake without grasping it.

Starting Position. Standing behind the starting mark in the lane with rear foot braced by another man's foot placed crossways behind it.

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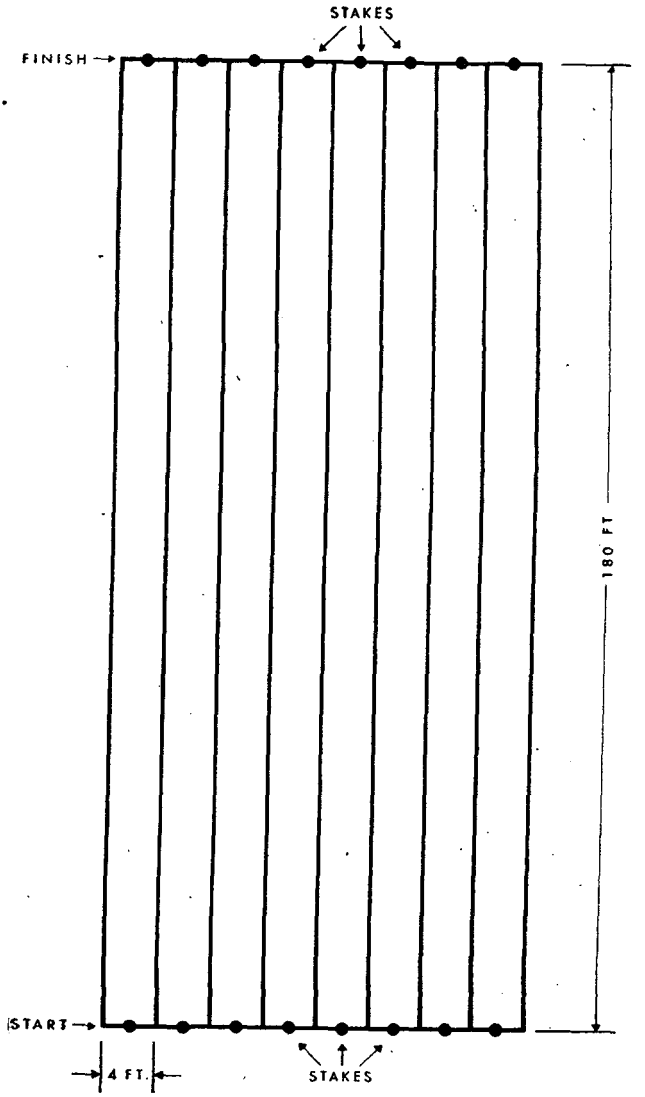
Movement. At the starting signal, run to the stake at the farther end of the lane. Run around the stake at the finish line. Then return and run around the stake at the starting line. Continue until five lengths of the course, or 300



yards have been run. Make each turn from right to left. The run will finish at the opposite end of the course from which it started.

Instructions. The men should be told to run at about 9/10ths full speed, to run straight down the lane, to turn around the far stake from right to left

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without touching it, and to return — running around the stakes one after another until they have traveled five full lengths. The men should also be instructed to walk around slowly for 3 or 4 minutes after completing the run. Recovery will be much more rapid if they walk than if they lie down.

Administration and Scoring. Each runner has one inspector, or judge, who stands at the finish line. The judge watches his runner to see that he makes the turns properly and observes all the rules. This inspector also holds the man's card and records his performance. A timekeeper stands on one of the lines in the middle of the course, 20 feet away from the finish line. The men are started by the starter with ordinary signals of: "Get on your mark; get set; go." Since the timer starts his watch by the "go", the starter should also use a hand signal.

When the first runner is about 30 yards away from the finish line, the timer begins to count the seconds aloud using "hup" for the half-seconds. For example, he counts "44, hup, 45, hup, 46, hup, 47, hup, 48, hup.....etc." The judge for each man listens to the count and at the same time watches his runner. He then records the last full second or half-second, which was counted before the man reached the finish line. After the inspector records the time on the man's score-card he returns the card to him.

TEST 5A: INDOOR SHUTTLE RUN

A course 25 yards long is laid out on the gymnasium floor with a lane 4 feet wide for each runner. The lanes should be marked on the floor with water-solvent coloring, chalk, paint or adhesive tape. Turning boards are placed at both ends of the course. Each turning board is placed at a 45° angle, facing inside the lane and toward the runner. The turning boards must be firmly braced and made of heavy material. They should be from 12 to 16 inches in width. The lower edges of the turning boards are flush with the end of the lines of the running area. The number of each lane will be painted on the face of its board.

Starting Position. Ready for a sprint start, with one foot braced against a turning board and the other foot and the hands extended into the lane.

Movement. On the starting signal, run to the turning board at the other end of the lane. Touch board with foot or feet. Turn and continue running until completing ten shuttle trips or laps (for a total of 250 yards). Touch the turning board at the end of each lap, except the final one. At the end of the final lap the runner will continue across the turning board. Any footwork may be used in making the turn provided the foot or feet touch the turning board each time.

Instructions. Each runner must stay in his own lane. Any method may be used in making the turn, although it is recommended that the forward foot touch

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the block on the turn. In the event a runner falls or is hindered by another participant entering his lane during the progress of the run, he may be permitted to repeat the run later in the same period.

Administration and Scoring. This event is administered and scored as the 300-yard run. The time of the run is taken as the runner's body passes beyond the turning board on the final lap.

TEST 5A(1): 60 SECOND SQUAT THRUST

When it is not possible to employ the indoor shuttle run as a substitute for the 300-yard run the 60-second squat thrust should be used.

Starting Position. Attention.

Movement. This event is the same as Exercise 3, paragraph 49, except that as many repetitions as possible are executed in one minute.

Instructions. The men should be told that in executing this movement for speed the shoulders should be well ahead of the hands when the legs are thrust backwards. Extending the legs too far backward, so that the shoulders are behind the hands, makes it difficult to return to the original position with speed. On the preliminary practice, the performer is told he will score better if he does not make a full knee-bend, but bends his knees only to about a right angle; and that he should keep his arms straight. It is not a failure if he bends his arms but the performer will not be able to score as well.

Administration and Scoring. A score is given for the successful performance of each complete squat thrust. No score is given if: the feet start backward before the hands are placed on the ground; the hips are raised above the shoulder-heel line when the feet are back; or the performer does not fully recover to the erect position on the fourth count. The judge should not count aloud as this is apt to confuse other nearby judges. If the man is performing the event incorrectly, the judge should coach him, or stop him and have him repeat the test after more coaching.

146. UNIFORMITY IN TESTING. The most important factor in test administration is uniformity. Otherwise, no reliance can be placed upon the results. If there are inconsistencies, the men soon recognize them and they will no longer put forth their best efforts. Hence, uniformity must be achieved in all of the following:

a. Judging and scoring the events. Unless all events are judged and scored in an identical manner, it is impossible to have confidence in the results. In order to secure complete uniformity in this regard, all judges and officials must be carefully trained. Participants should not be used to judge each other. There are often violations of proper form which no one but a trained judge can recognize. A trained judge is also more impartial than fellow participants.

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The uniformity of judging and scoring will be in direct ratio to the time spent in training judges and scorers. Company officers and noncommissioned officers are usually best qualified for this job. The physical training officer should supervise the test very carefully to see that all judging and scoring is done uniformly.

b. Order in which the events are conducted. A true indication of the performance of the men cannot be obtained unless the test events are conducted in the same order for all the men. Fatigue from participation in certain events will markedly reduce performance in other events. For example, it would not be fair to compare the pullup records of two men, one of whom ran the 300-yard run immediately before doing the pullups, and the other of whom did not. It takes slightly longer to conduct the events so that all men will take them in the same order, but the extra time will be well justified. As soon as the first two squads of men have finished the pullups they should then proceed to the next station and begin squat jumps. After finishing the squat jumps, they proceed to the pushups and so on. Meanwhile the other squads follow in like manner. The whole company unit need not wait until all individuals have finished the first event before anyone starts the second event.

c. Motivation. Unless the men exert themselves fully, the results will not represent their true condition. All groups, therefore, should be uniformly motivated and every effort made to obtain the best performances of each individual.

d. Condition of the field areas, equipment and facilities. All conditions should be the same for the various groups taking the tests. Where at all possible the ground used for the run should be smooth and dry.

e. Activities prior to the hour of the test. On the day of the test the activity immediately preceding the test should not be too vigorous. For example, men marching four miles to the test area, are at a disadvantage compared to men riding to the area. Those who stand guard the night previous to the test, will be somewhat handicapped. In the interest of uniformity all the testing should be done in the morning, or all in the afternoon. Testing on Mondays or on the day after pay day should be avoided.

f. Wearing apparel. All men should wear similar clothing. This is particularly important with regard to shoes. It is permissible to remove shirts when climatic conditions warrant.

147. ADMINISTRATION OF TESTS. a. As the men come to the testing area, each should be given his score card, the heading of which should have been filled out previously. These cards are carried by the men throughout the test and collected at its conclusion. The men should be cautioned to protect the cards and avoid bending or tearing them. The official in each event scores the man's card and returns it to him.

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b. All five events should be completed in one test period. All men take the test events in the same order. Before beginning an event, the officer-in-charge demonstrates and explains the proper form and states the scoring procedure. Whatever form is followed must be consistent for all groups in the same organization.

c. The officials should be well trained in advance of the test. They should appear in khaki to contrast with the men being tested. Six commissioned officers and 30 noncommissioned officers can administer the test battery in paragraph 143 to 300 men in 2 hours. For more or fewer men, the number of officials can be proportionately greater or smaller.

d. The following equipment is needed to administer the test:

(1) Score cards. These should be made of cardboard.

(2) Watches. Two stop watches or sweep second-hand watches.

(3) Stakes. Two stakes for each lane for the 300-yard run. (As many as 20 men may run at one time.)

(4) Chinning bars. 7 feet 9 inches, to 8 feet high. Smooth wooden bars are satisfactory. The bars should be fastened on the posts so they cannot turn. There should be room for at least 6 men to pullup for each 100 men tested at one time. Blocks attached to the uprights, 2 feet from the ground will enable short men to reach the bar easily.

(5) Pencils. All judges should have pencils.

(6) Lime Marker. There should be a lime marker for marking out the starting and finishing lines for the 300-yard run and, if possible, the lanes.

148. SCORING TABLES. a. Tables have been devised for scoring the test events in paragraph 143. These tables make it possible to determine each man's total score. It is obviously impossible to combine the number of pullups, the number of squat thrusts, the number of pushups, etc. for a total score. These scoring tables are derived statistically. The data from which these scoring tables were derived were based upon the performance of troops in good physical condition. The mean or average score is 50 points and the range is from 0 to 100 points. Thus a score of 50 represents the average score of individuals in good physical condition. Not more than 1 percent of a well-conditioned unit will score above 100. Not more than 1 percent of a well-conditioned unit fails to score at all. Scoring tables and standards for determining poor to excellent scores for each event are found in Table III.

b. In addition to their value in determining a man's total score, the scoring tables provide a powerful motivating device. The competitive spirit of the men is aroused because they want to make the highest total score and to surpass their friends. Further, since 50 represents the average score of well-conditioned troops, the point score gives each man a means of comparing his own performance with established norms.

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TABLE III

PHYSICAL EFFICIENCY SCORING TABLE

	POINTS	PULLUPS	SQUAT JUMPS	PUSH UPS	2-MIN. SITUPS	300 YDS.	INDOOR SHUTTLE RUN	60 SEC. SQUAT THRUST	POINTS
EXCELLENT	100	20	75	54	79	44	41	41	100
	99		74						99
	98	19	73	53	78			40	98
	97		72	52	77		41½		97
	96	18	71			44½			96
	95		70	51	76				95
	94		69				42		94
	93	17	68	50	75			39	93
	92		67		74	45			92
	91		66	49	73				91
	90	16	65	48	72				90
	89		64				42½	38	89
	88		63	47	71	45½			88
	87	15	62	46	70				87
	86		61	45					86
	85		60	44	69	46		37	85
	84		59				43		84
	83	14	58	43	68				83
	82		57		67				82
	81		56	42		46½			81
	80		55		66			36	80
	79	13		41	65		43½		79
	78		54		64	47			78
	77		53	40					77
	76		52		63			35	76
	75		51	39	62				75
GOOD	74	12	50			47½	44		74
	73		49	38	61				73
	72		48		60			34	72
	71			37		48			71
	70		47		59		44½		70
	69	11		36					69
	68		46		58	48½			68
	67		45	35	57			33	67
	66		44				45		66

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TABLE III—cont'd

	POINTS	PULLUPS	SQUAT JUMPS	PUSH UPS	2-MIN. SITUPS	300 YDS.	INDOOR SHUTTLE RUN	60 SEC. SQUAT THRUST	POINTS
GOOD	65		43	34	56	49			65
	64	10			55				64
	63		42	33				32	63
	62		41		54	49½	45½		62
	61			32	53				61
	60		40						60
	59		39	31	52	50		31	59
FAIR	58	9			51		46		58
	57		38	30					57
	56				50	50½			56
	55		37	29	49			30	55
	54						46½		54
	53		36		48	51			53
	52	8	35	28	47				52
	51							29	51
	50		34		46	51½	47		50
	49								49
	48		33	27	45				48
	47				44	52		28	47
	46	7	32				47½		46
	45			26	43				45
	44		31			52½			44
	43				42		48	27	43
POOR	42		30	25	41				42
	41					53			41
	40	6	29		40			26	40
	39			24			48½		39
	38				39	53½			38
	37		28						37
	36			23	38		49	25	36
	35		27			54			35
	34			22	37				34
	33	5					49½		33
	32		26		36	54½		24	32
	31			21					31
	30		25		35	55			30
	29						50		29

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TABLE III—cont'd

	POINTS	PULLUPS	SQUAT JUMPS	PUSH UPS	2-MIN. SITUPS	300 YDS.	INDOOR SHUTTLE RUN	60 SEC. SQUAT THRUST	POINTS
POOR	28				34			23	28
	27		24	20		55½			27
	26	4			33		50½		26
VERY POOR	25		23			56		22	25
	24			19	32				24
	23						51		23
	22		22		31	56½		21	22
	21			18					21
	20				30	57	51½		20
	19	3	21						19
	18			17			52	20	18
	17				29	57½			17
	16		20						16
	15				28	58	52½	19	15
	14			16					14
	13		19		27		53		13
	12					58½		18	12
	11	2					53½		11
	10			15	26	59			10
	9		18				54		9
	8				25	59½		17	8
	7						54½		7
	6			14	24	60			6
	5		17				55	16	5
	4					60½	55½		4
	3				23				3
	2	1		13		61	56	15	2
	1		16		22		56½		1

149. ADJUSTMENT FOR AGE. All combat troops should endeavor to achieve a high standard of physical fitness regardless of age—for military combat takes no cognizance of age. However, for the purpose of scoring, the standards tend to drop one point for each year beyond 30. Thus, a score of 50 (Table III) made by a man of 40 is equivalent to a score of 60 made by a man of 30 or younger.

PHYSICAL FITNESS SCORE CARD

NAME_____ SERIAL NO._____
(Last Name) *(First Name)* *(Initial)*
PLEASE PRINT

UNIT_____ AGE_____ HEIGHT_____ WEIGHT_____
(Co. or Bty. *Bn.* *Reg.* *Div.)*

EVENT	AVERAGE	EXCELLENT	FIRST TEST		SECOND TEST		THIRD TEST		FOURTH TEST	
			RAW SCORE	POINTS	RAW SCORE	POINTS	RAW SCORE	POINTS	RAW SCORE	POINTS
PULLUPS	8	13								
SQUAT JUMPS	34	51								
PUSHUPS	27	39								
SITUPS	46	62								
300 YDS.	51.5	47.5								
INDOOR SHUTTLE RUN	47	44								
TOTAL	250 pts.	371 pts.								
DATE										

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150. SCORE CARDS. A well-prepared score card also motivates the men to strive to reach their best performances. The scoring table should be used in connection with the score card. As the judge records each man's raw score, he may also indicate the point score. Because men are always asking what constitutes an average score and what constitutes a good score, it is recommended that average and excellent raw scores also be indicated in a column on the score card. The men should be told that these are scores of well conditioned troops, not of just average troops. The score card should, where possible, provide space for scoring tests given at different times. By comparing the subsequent scores with their earlier scores the men are motivated to attempt to exceed their previous scores. A sample physical fitness score card is shown on the opposite page. It will be noted that both the indoor and outdoor endurance run are included. Only one of these events will be performed on each test. Where it is impossible to administer either of these events, the 60-second squat thrust is substituted.

151. PHYSICAL FITNESS PROFILES. The physical fitness profile (Table IV) serves as a further motivating device. In addition, it provides a record of each man's physical status over a period of time and reveals clearly his progress. It is recommended that every company commander have a physical fitness profile for each man in his organization. The raw score which each man makes on each test is encircled. Lines are then drawn connecting the circles. Different colored pencils should be used for each test. These profiles should be filled out immediately after tests are completed. The profiles may be used as score cards, but if this is done, care must be exercised that the cards are not torn or bent.

152. PHYSICAL FITNESS COMPETITION. a. A physical fitness tournament can be conducted within a regiment to determine the most fit company. Such competition stimulates interest in physical fitness and motivates all men to improve their condition. Each company must test not less than 90 percent of its total personnel to obtain a company average. Otherwise, some organizations will exclude from the test all men who might pull down the average. The lowest company on each event is scored one point. Each succeeding place is scored one additional point. Thus if 12 companies are in the competition, the company with the highest average on pullups, for example, would score 12 points for that particular event. The company with the lowest average would score one point. The company with the highest number of points for the five items is the winner.

b. Another method of providing group motivation is to award a traveling trophy to the company with the least number of men falling below the *Fair* category in total point scores.

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TABLE IV

PHYSICAL FITNESS PROFILE

NAME _____ SERIAL NO. _____ AGE _____ HEIGHT _____
Last Name *First Name*

	FIRST TEST	SECOND TEST	THIRD TEST	FOURTH TEST
DATE				
WEIGHT				

	PULLUPS		SQUAT JUMPS		PUSHUPS		TWO-MINUTE SITUPS		300 YARD RUN		INDOOR SHUTTLE RUN		TOTAL POINTS (5 EVENTS)
	RAW SCORE	POINT SCORE	RAW SCORE	POINT SCORE	RAW SCORE	POINT SCORE	RAW SCORE	POINT SCORE	RAW SCORE	POINT SCORE	RAW SCORE	POINT SCORE	
EXCELLENT	20	100	75	100	54	100	79	100	44	100	41	100	500
	19	98	72	97	52	97	77	97			41.5	97	
	18	96							44.5	96			
			69	94							42	94	
	17	93			50	93	75	93	45	92			
	16	90	66	91	48	90	73	91					
			63	88			71	88	45.5	88	42.5	89	
	15	87	60	85	46 44	87 85	69	85	46	85			
	14	83	57	82			67	82			43	84	
	13	79			42	81	65	79	46.5 47	81 78	43.5	79	
			54	78	40	77							
			51	75			63	76					371
GOOD	12	74			38	73	61	73	47.5	74	44	74	370
			48	72					48	71			
	11	69			36	69	59	70			44.5	70	
			45	67			57	67	48.5	68			
	10	64			34	65	55	64	49	65	45	66	
			42	63					49.5	62	45.5	62	
			39	59	32	61	53	61	50	59			291
FAIR	9	58	38	57	30	57		58				58	290
							49	55	50.5	56			
			36	53					51	53	46.5	54	
	8	52	34	50	28	52	47	52	51.5	50	47	50	
							45	48	52	47			
	7	46	32	46	26	45	43	45	52.5	44	47.5	46	
											48	43	211
POOR	6	40	30	42			41	42	53	41			210
					24	39					48.5	39	
			28	37			39	38	53.5	38			
					22	34	37	34	54	35	49	36	
	5	33	26	32					54.5	32	49.5	33	
							35	30	55	30			
			24	27	20	27				27	50	29	
	4	26					33	26			50.5	26	126
VERY POOR					19	24			56	25			125
			22	22			31	22			51	23	
	3	19							57	20			
					17	18	29	17			52	18	
			20	16					58	15			
							27	13			53	13	
	2	11							59	10			
			18	9	15	10					54	9	
							25	8	60	6			
											55	5	
							23	3					
	1	2	16	1	13	2			61	2	56	2	0

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153. UTILIZING TEST RECORDS. The purpose of the testing is to find out the condition of the troops and then to do something about the deficiencies revealed. The test results must be used. Particular attention should be devoted to men who are considerably below the average on any test. One method which has been employed successfully is to assign the platoon leaders the responsibility for bringing up the performances of men who are below average. Much can be done in this way in off-duty time. If it is found that a unit is deficient in some one event, considerable time can be devoted during the conditioning exercises to improve the performances in that event. For example, if general weakness of abdominal muscles is indicated, the men should be required during the conditioning exercises to attempt to increase by five each week, the number of situps they can do.

154. FREQUENCY IN TESTING. Men are disinclined to cooperate if they are tested too frequently. A test every 8 to 12 weeks is sufficient in peace time. During the basic training, however, it is advisable to test the men every 6 weeks. Thus, there would be normally three to four tests during the replacement training period. The first test ordinarily comes at the end of the first or second week. After that the test is conducted every 5 or 6 weeks. The test should be administered thoroughly every time it is given. **Whether or not to employ these tests is, of course, a command responsibility.**

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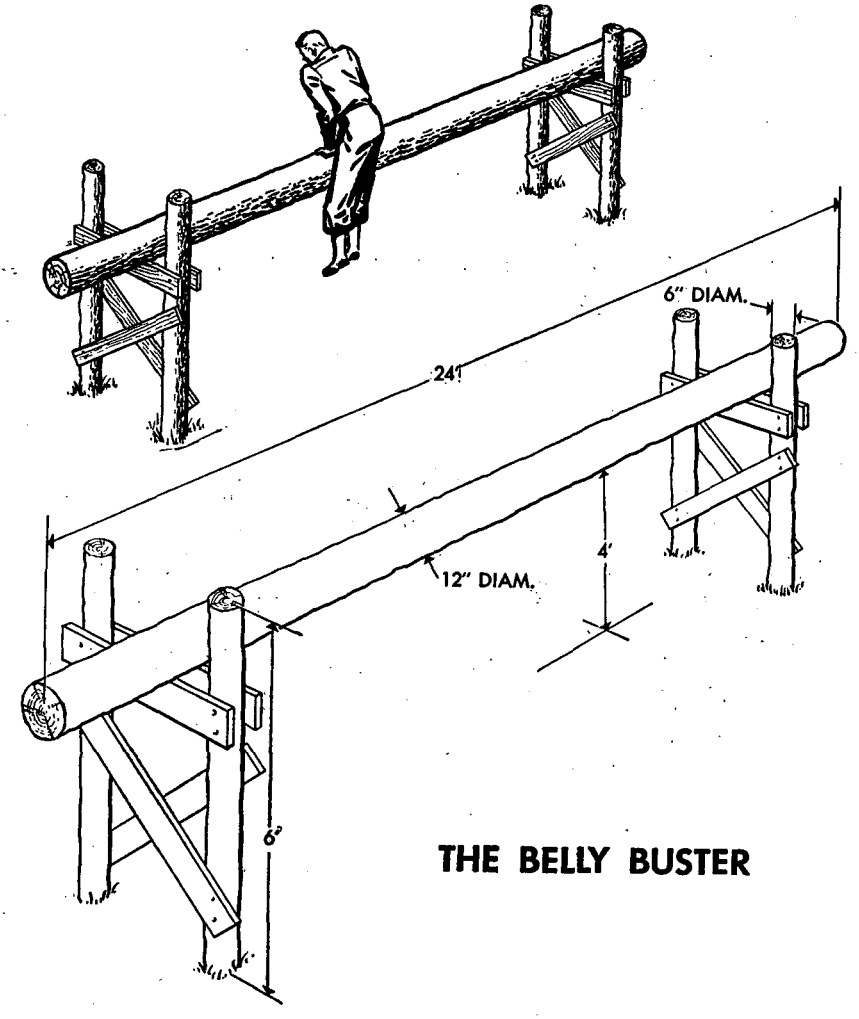
APPENDIX

CONFIDENCE COURSE



THE BELLY BUSTER

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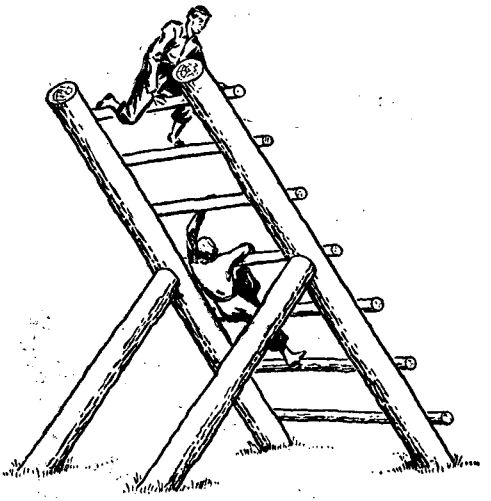

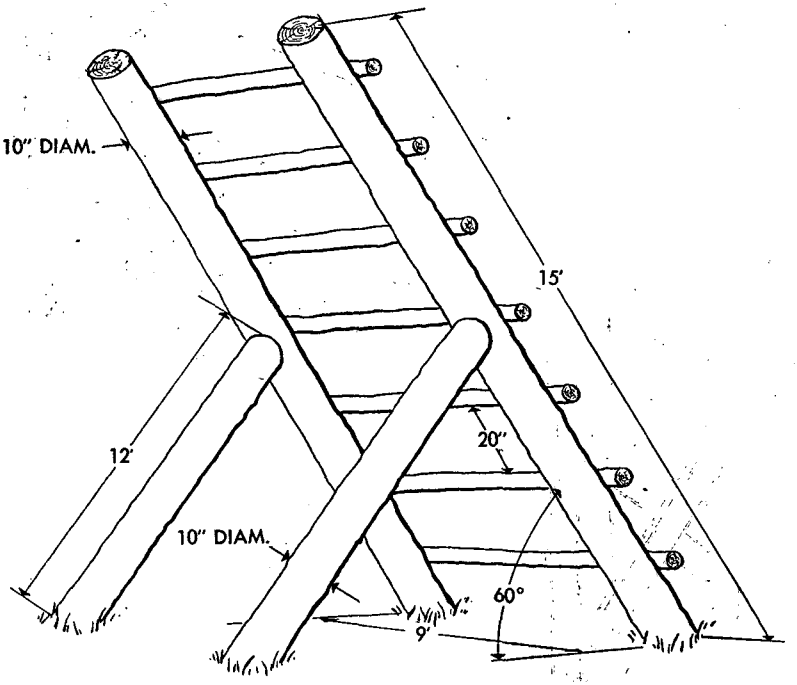

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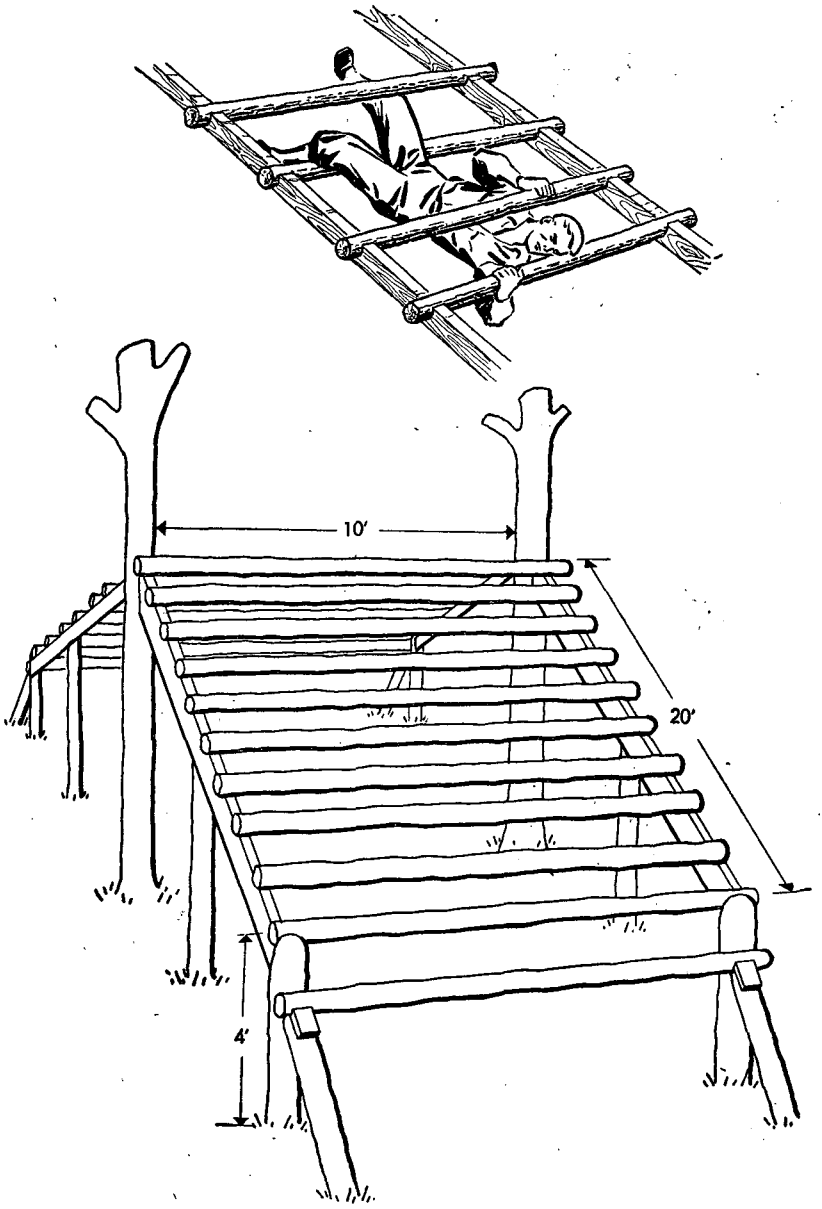

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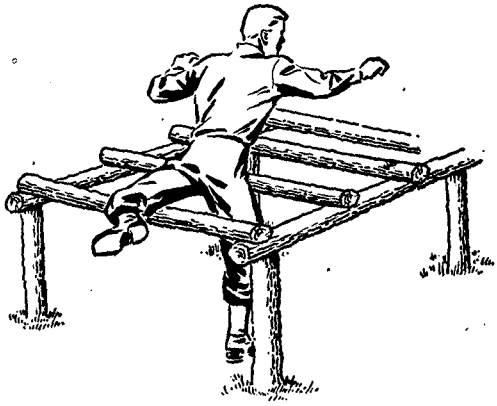
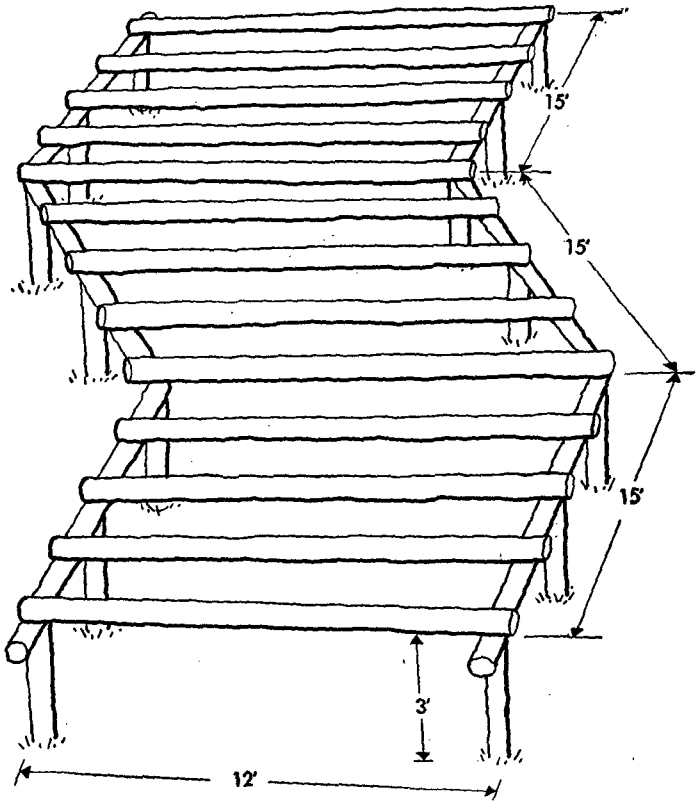
HIP-HIP





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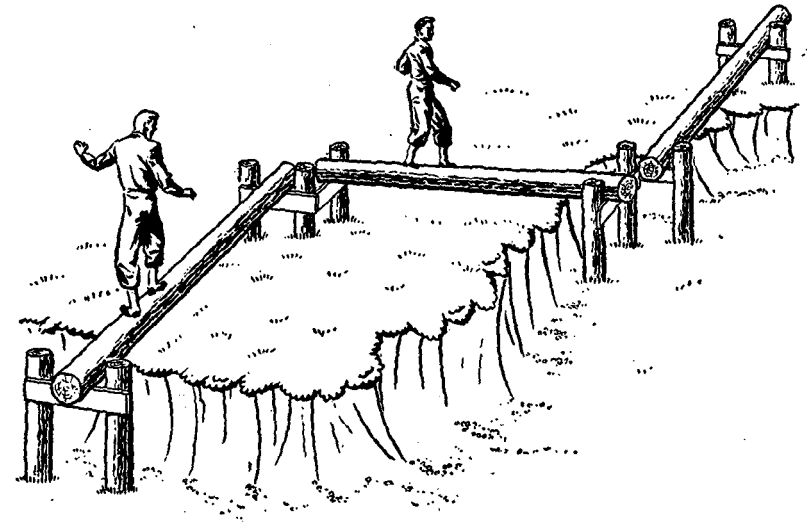

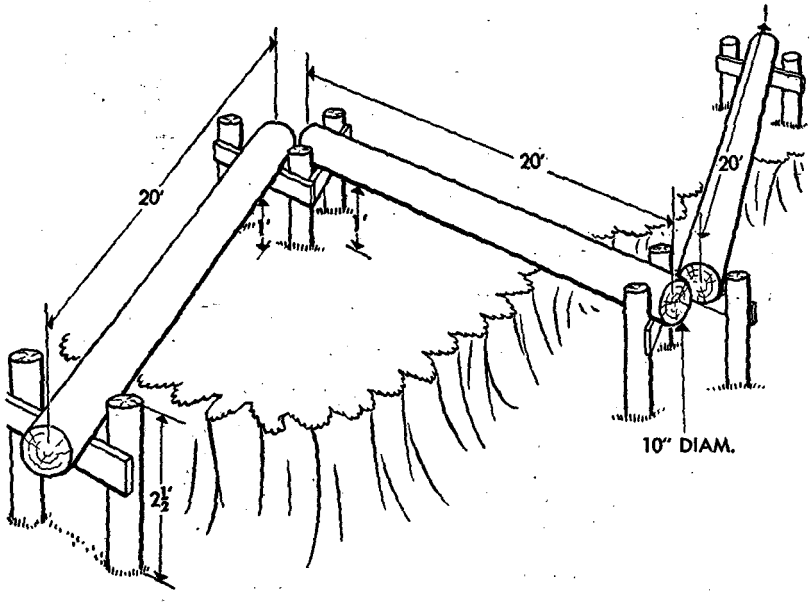

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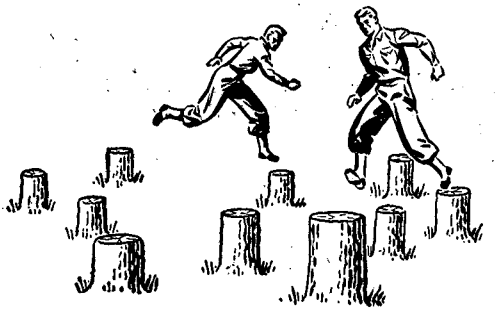

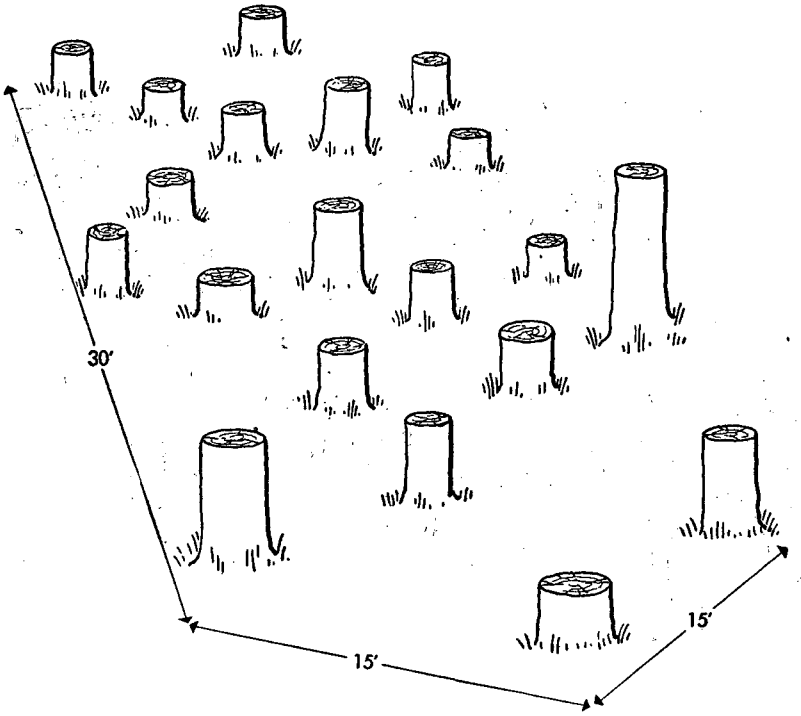

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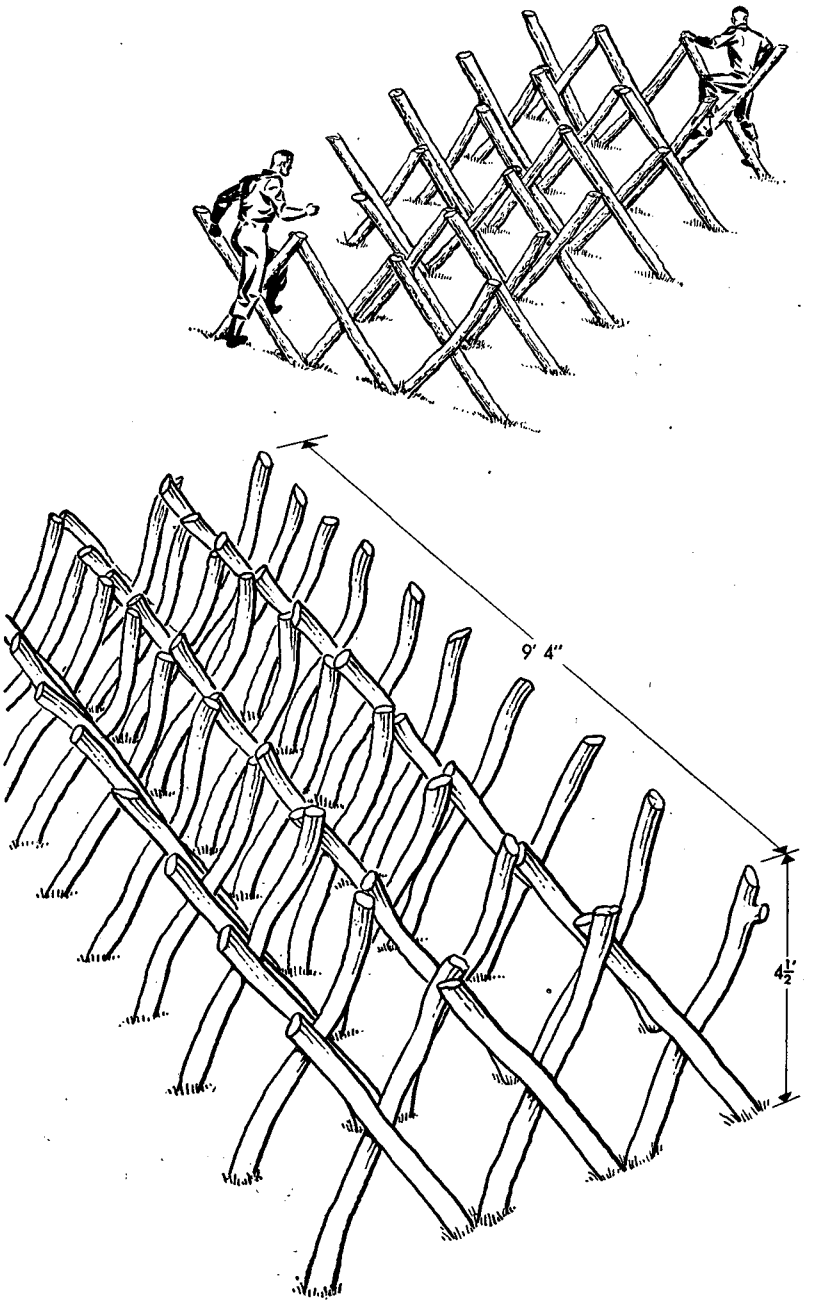
THE TOUGH NUT



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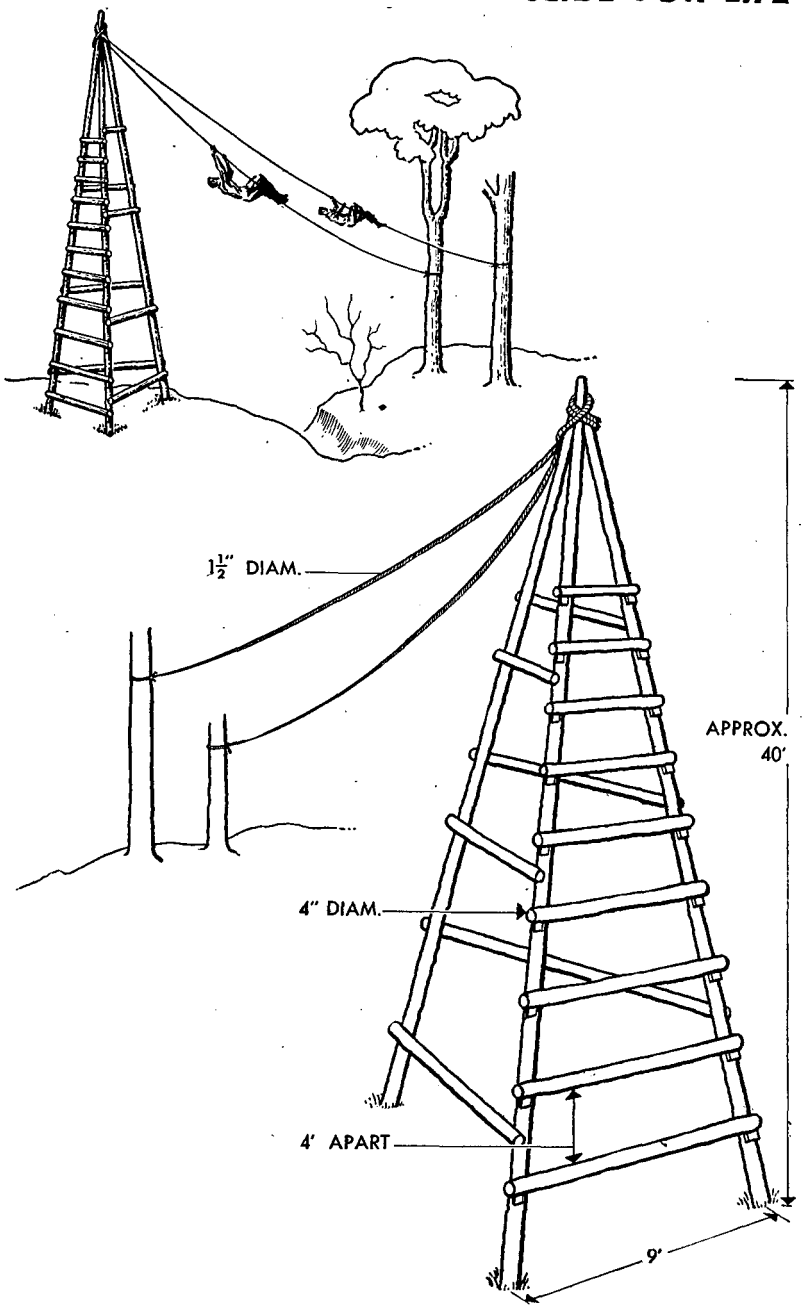
SLIDE FOR LIFE



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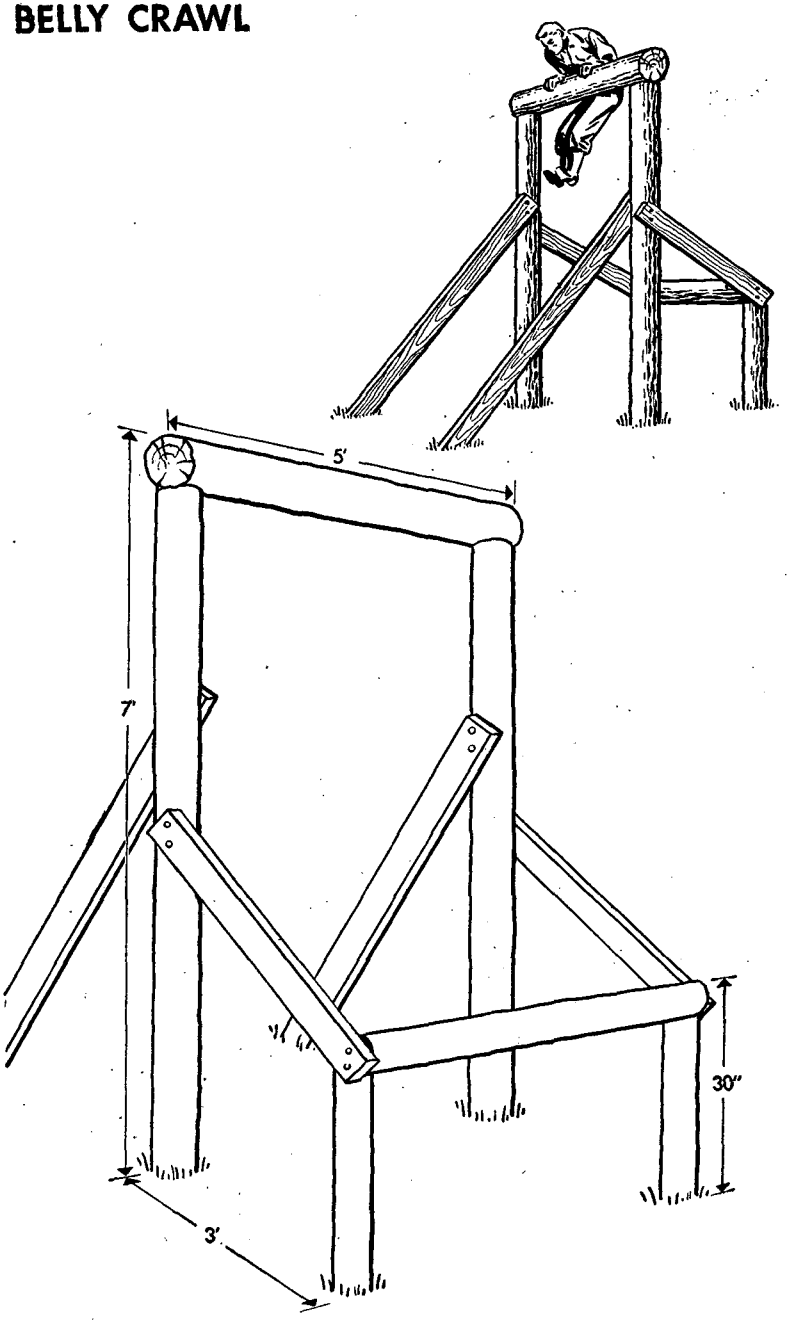
BELLY CRAWL



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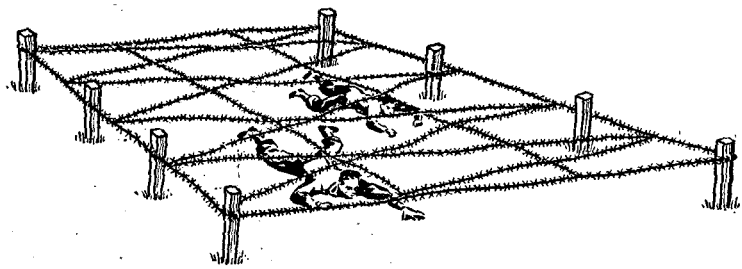
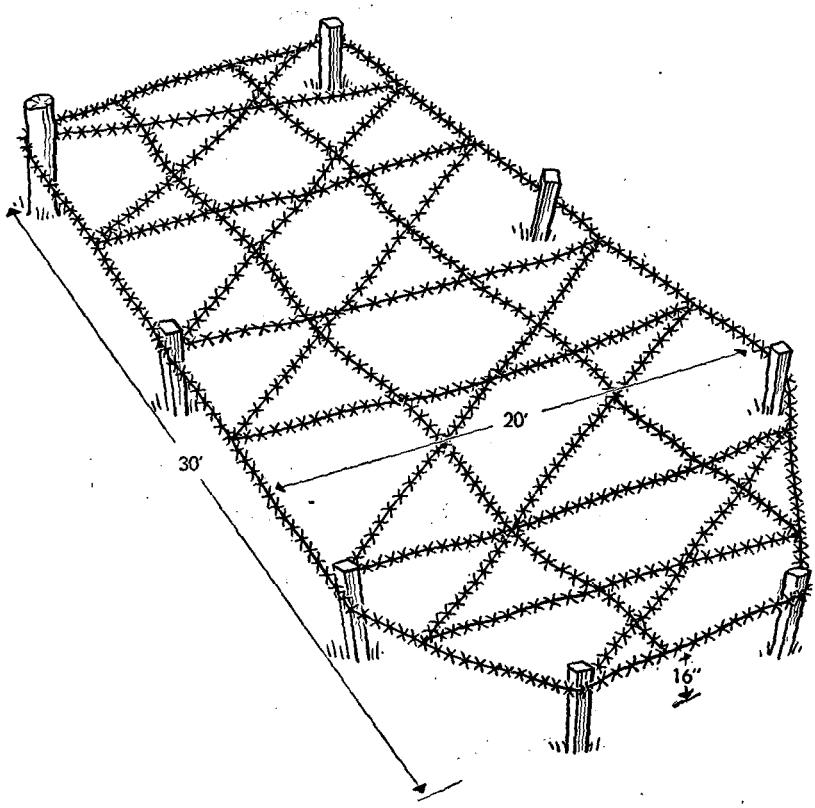
LOW BELLY OVER





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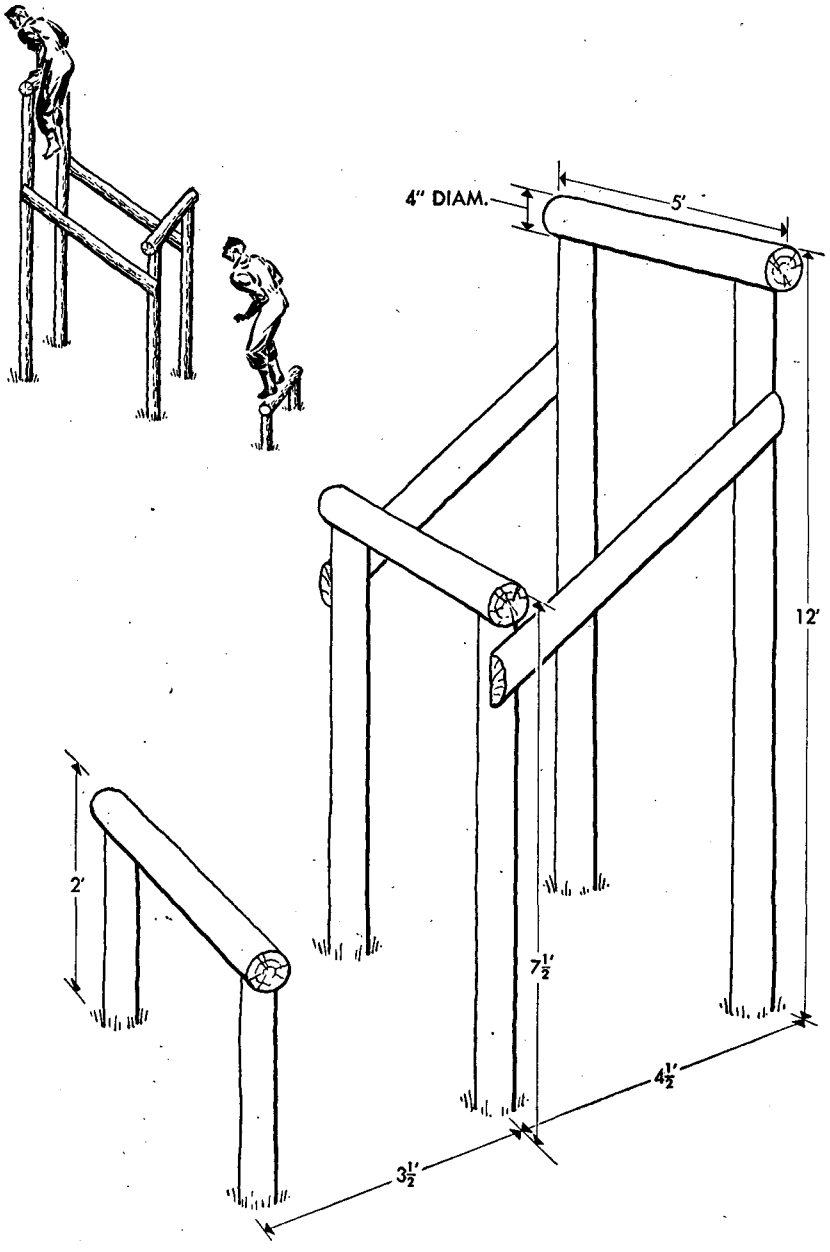
THE DIRTY NAME



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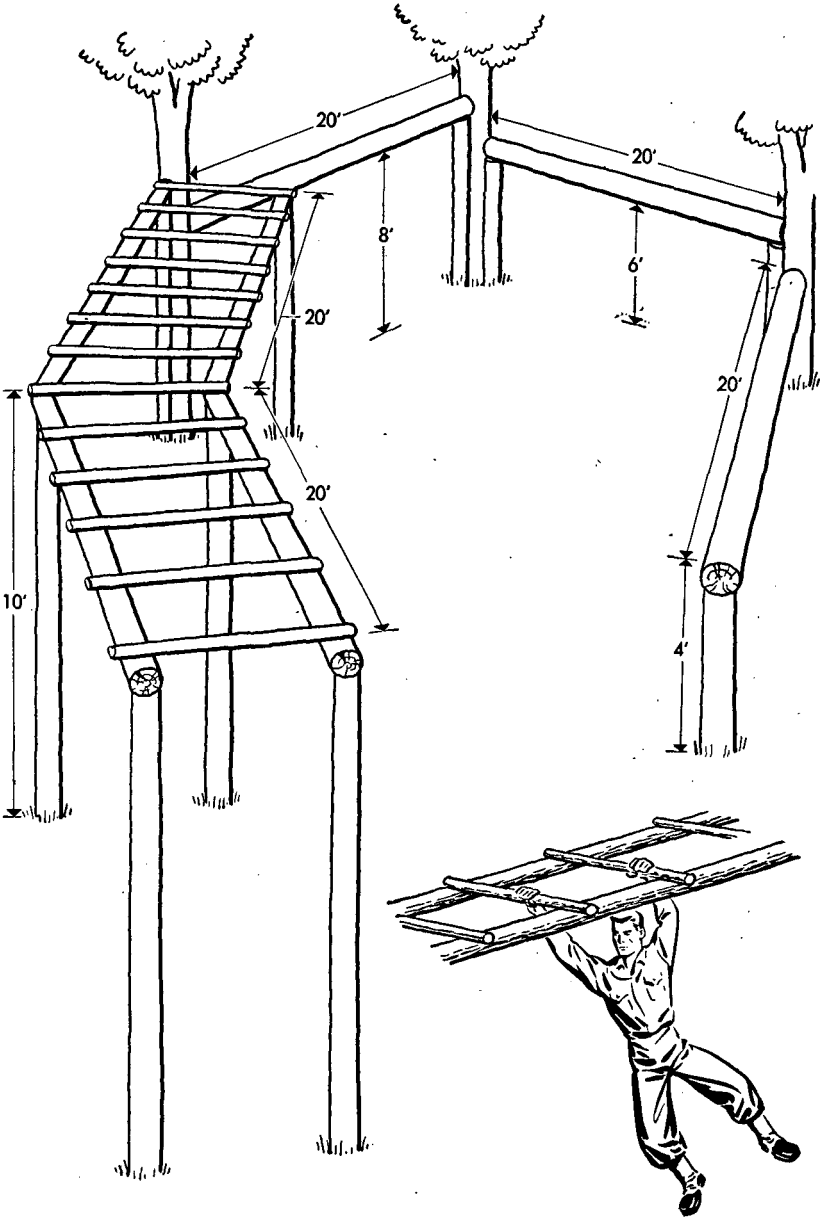

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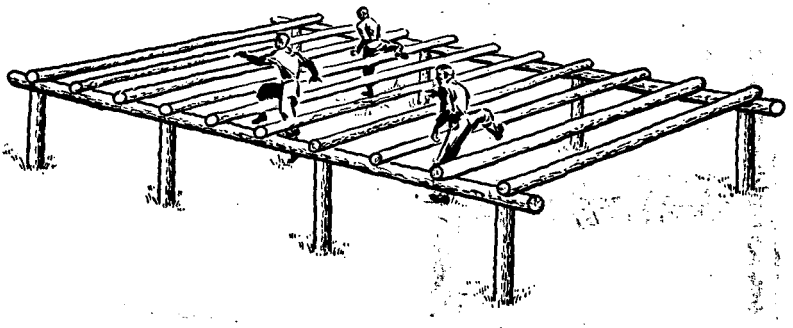
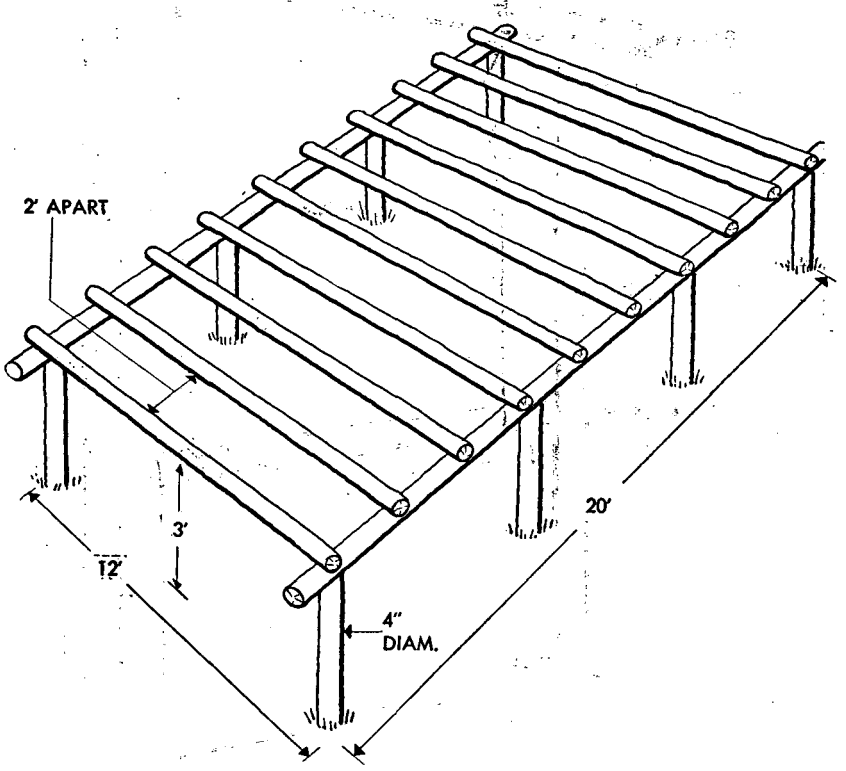
HIGH STEP OVER





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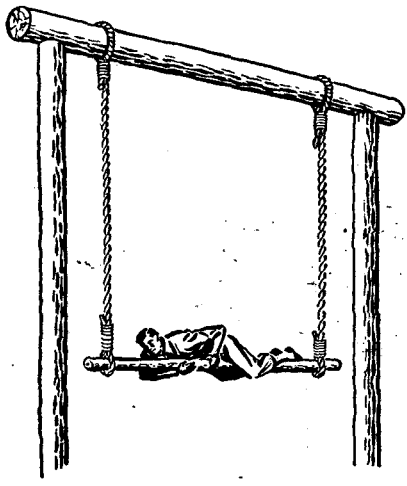

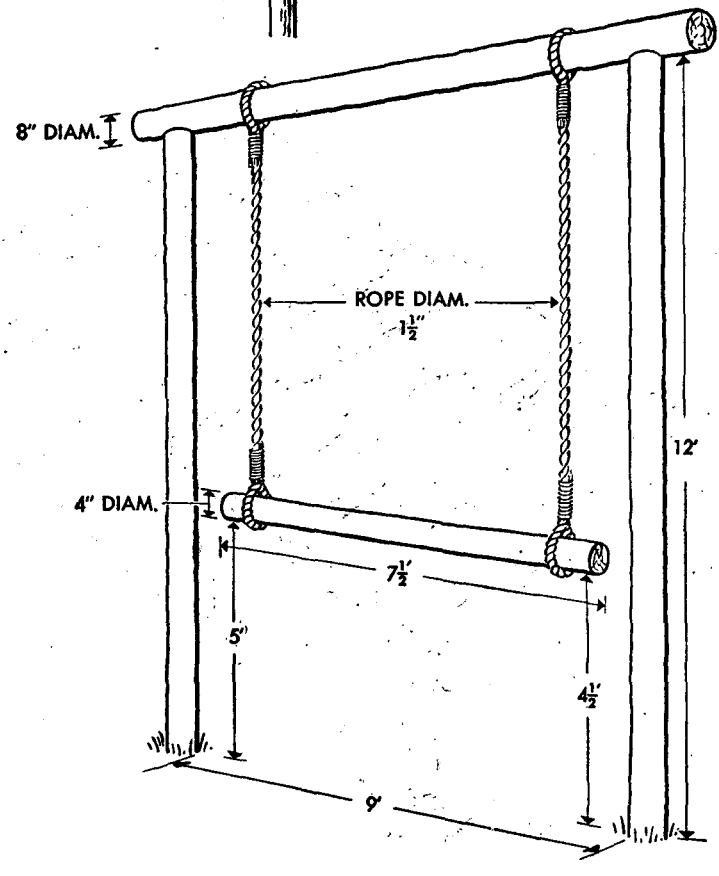

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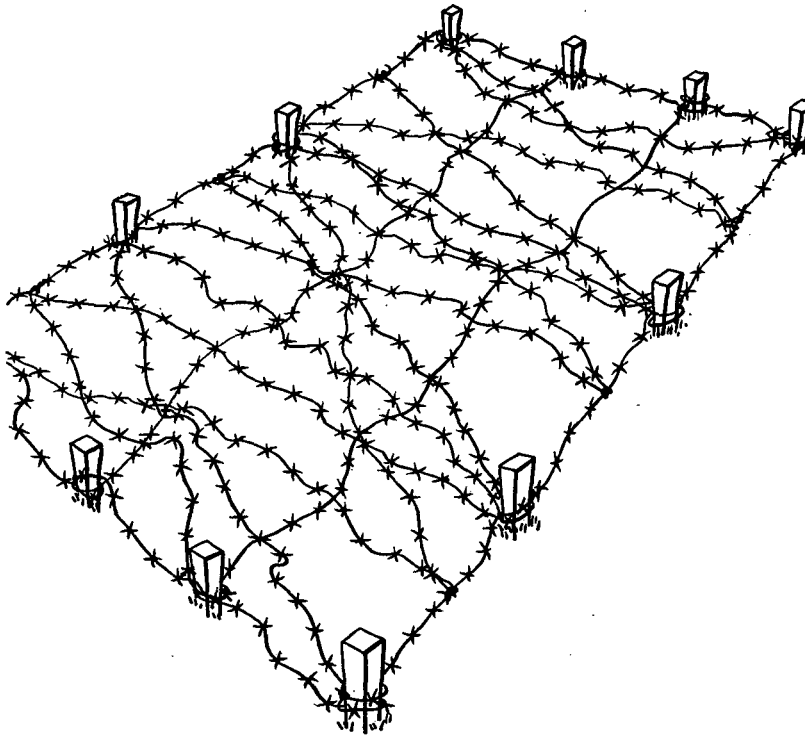
LOW WIRE



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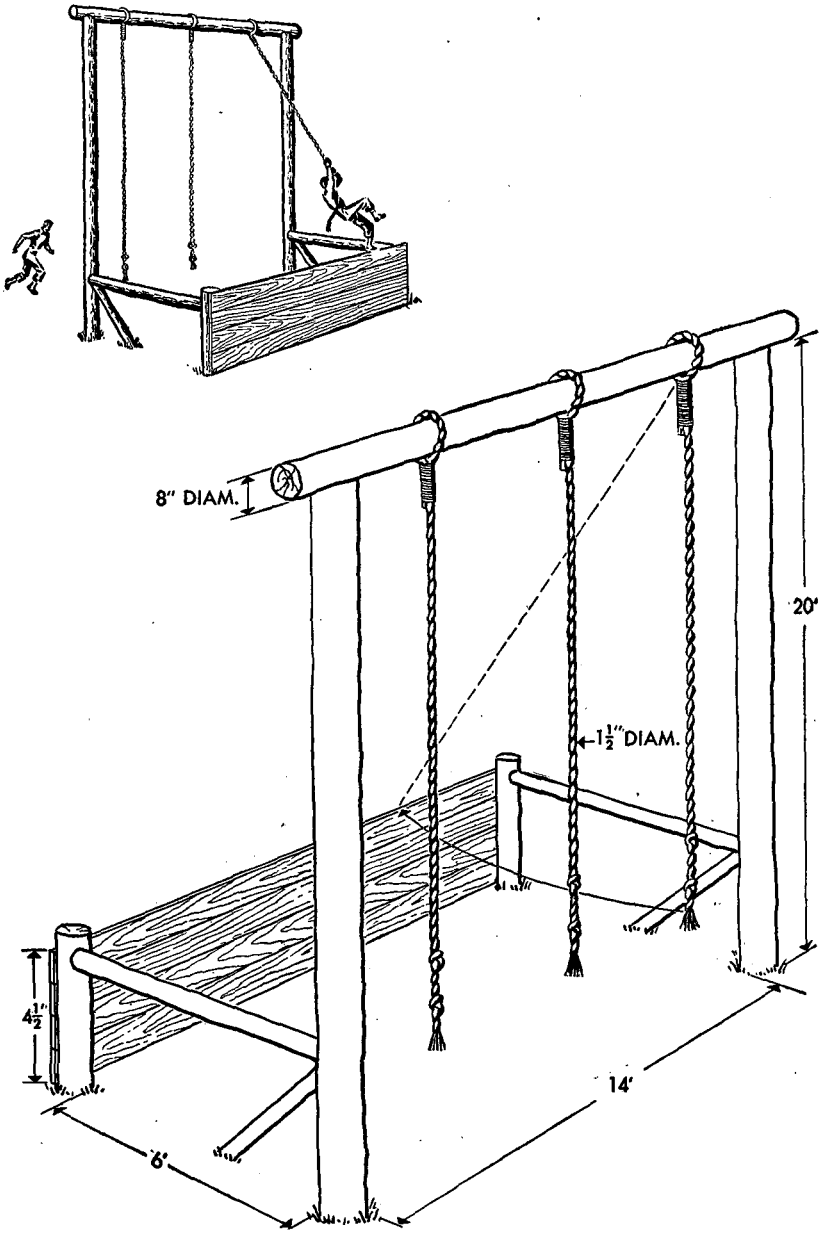
SWING, STOP, and JUMP



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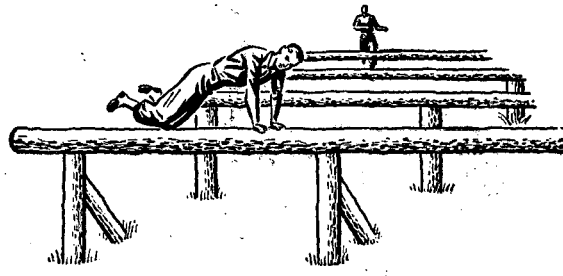

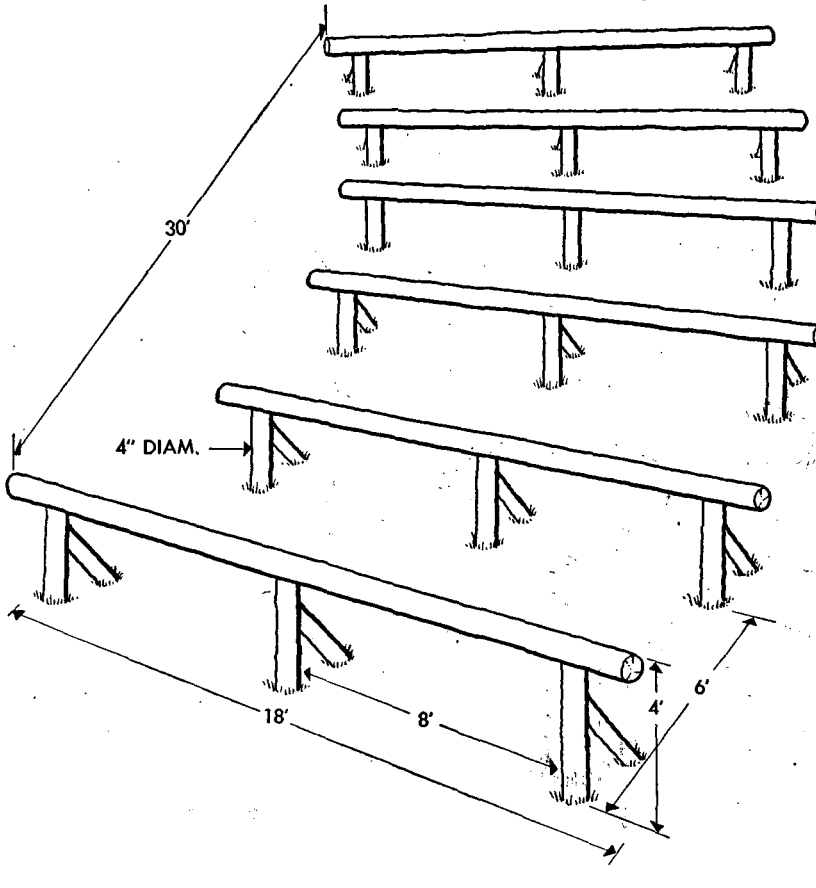

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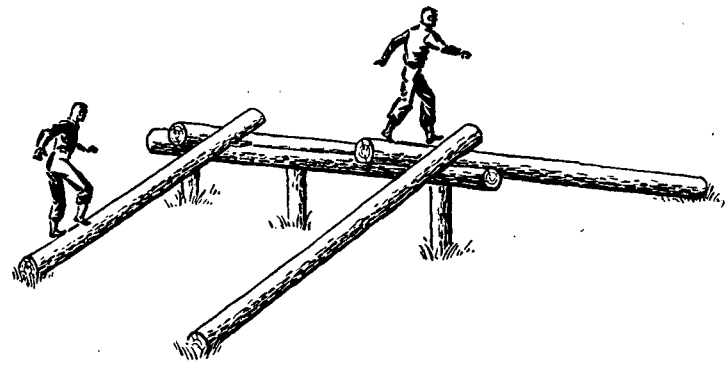

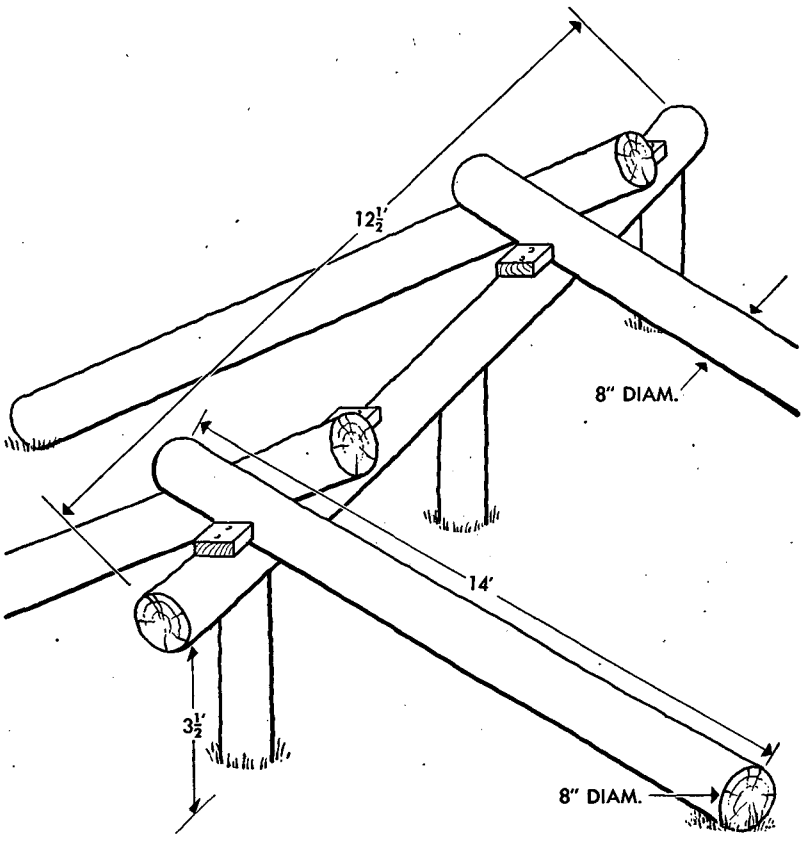

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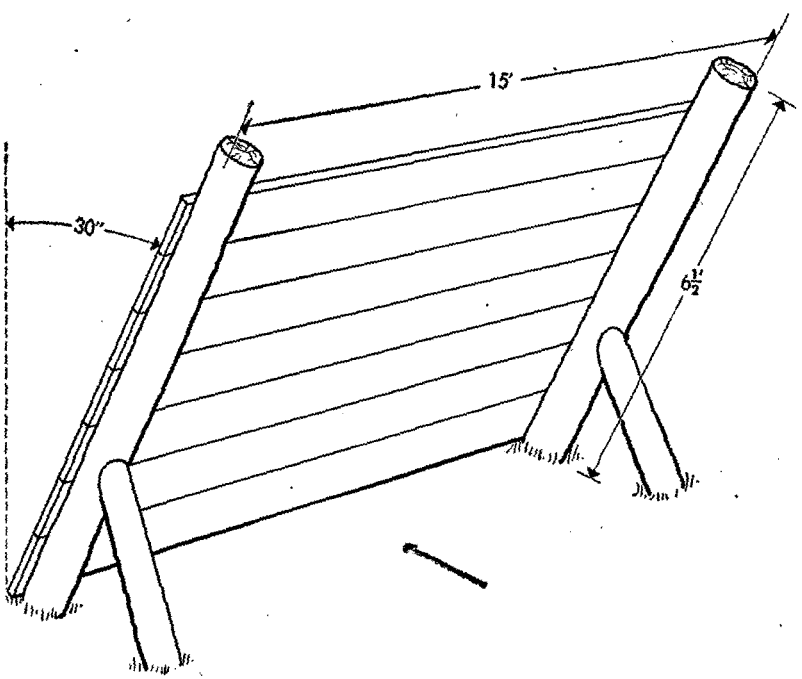

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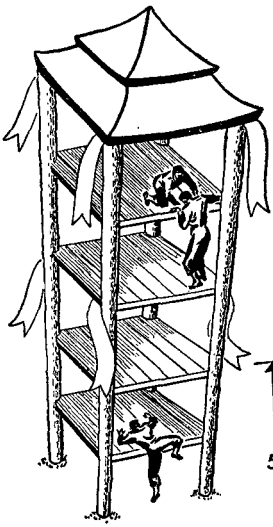

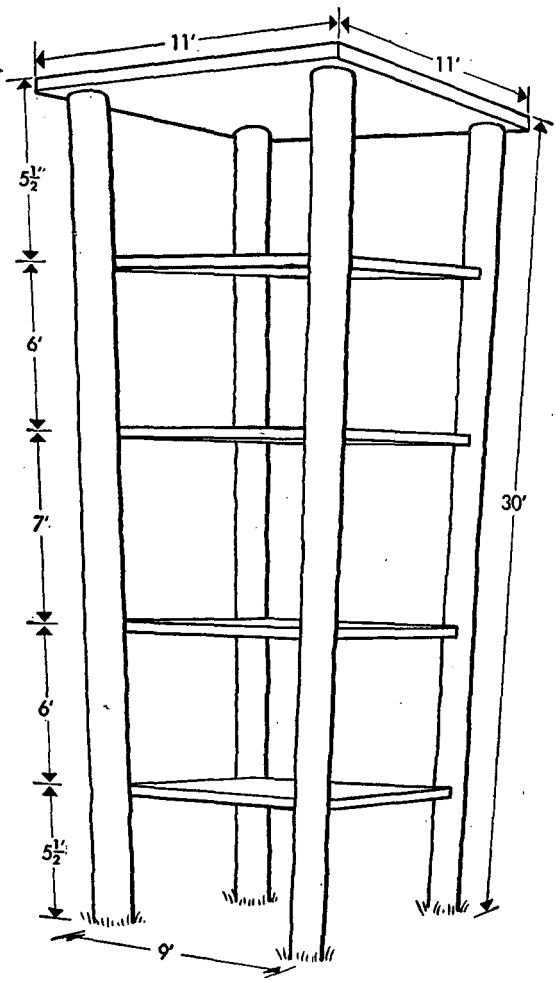

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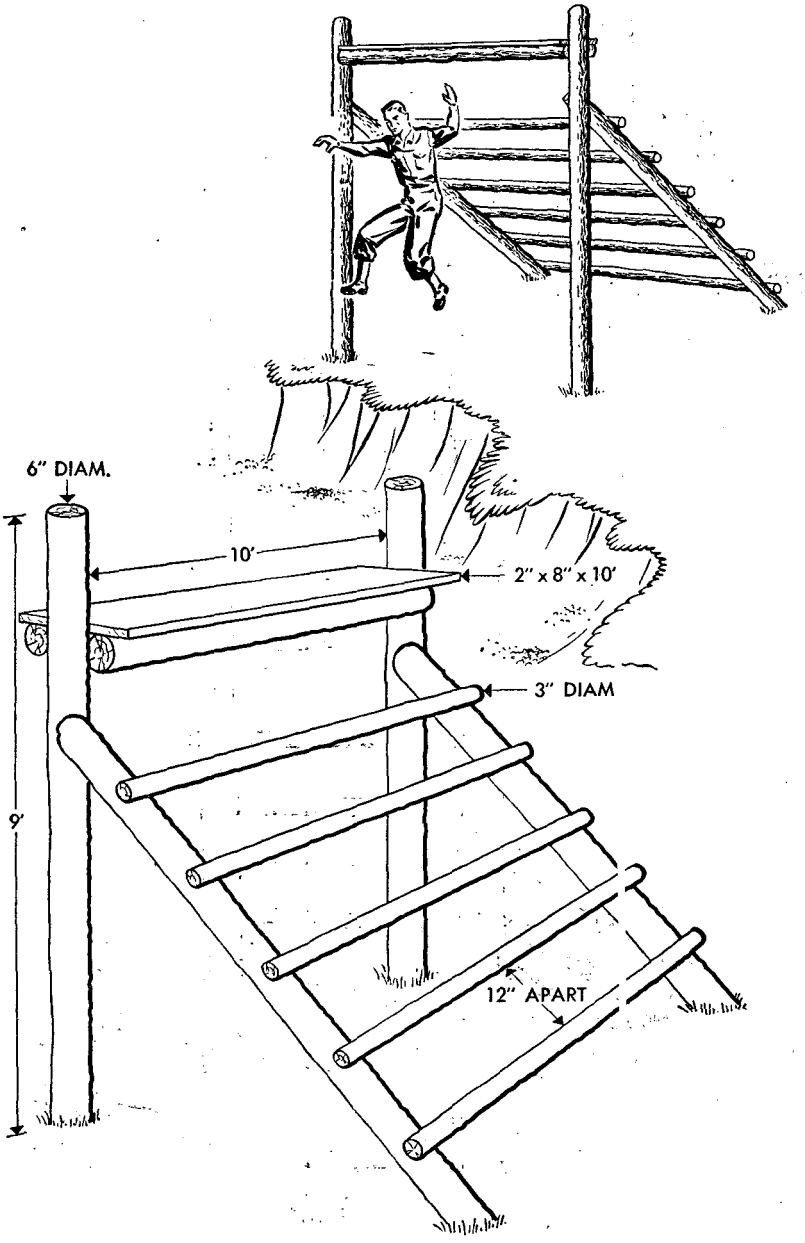
JUMP and LAND



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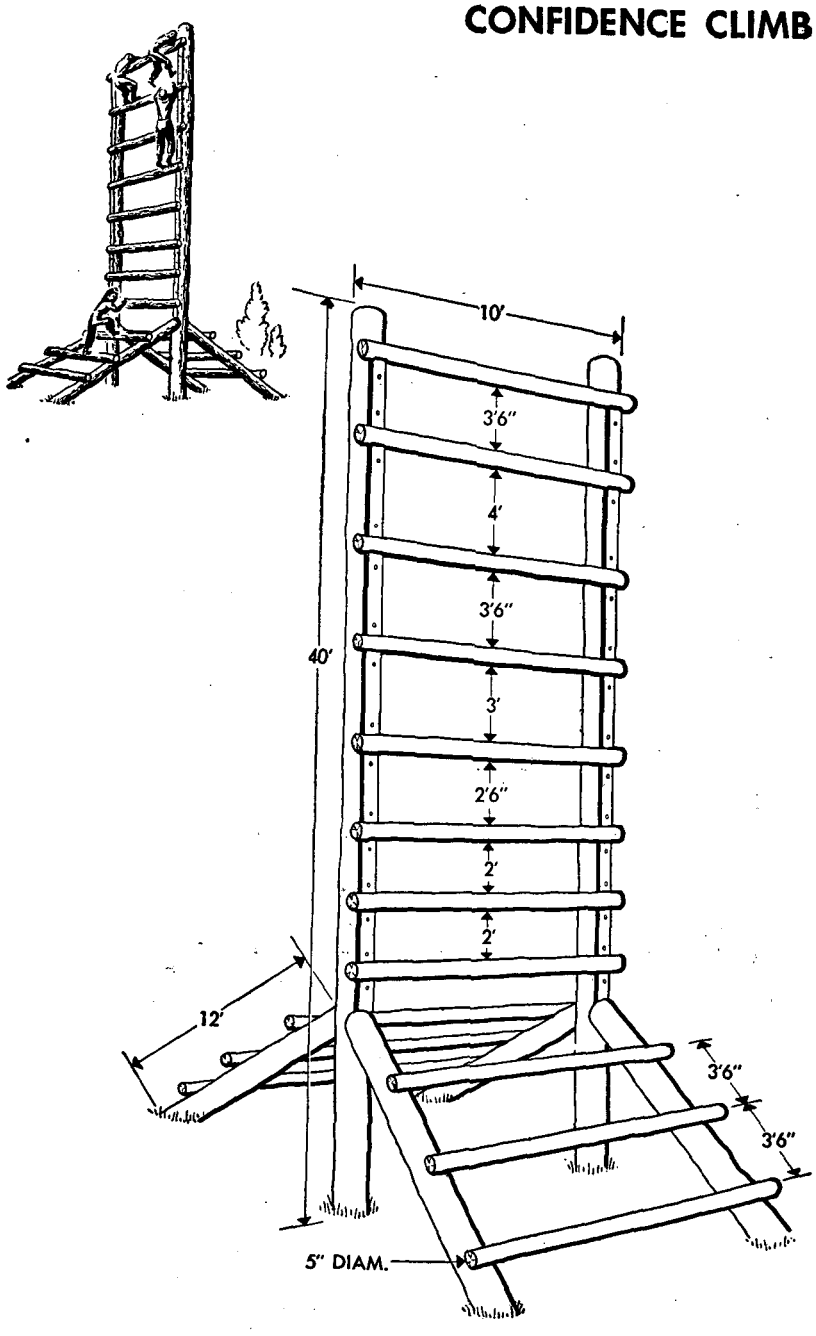

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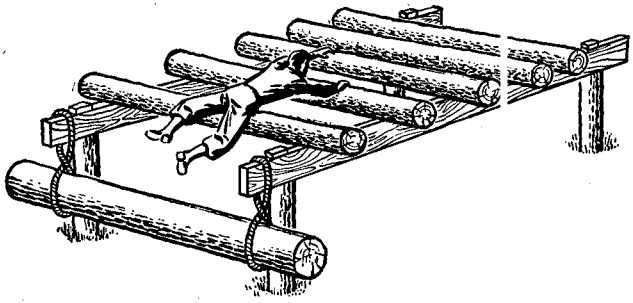

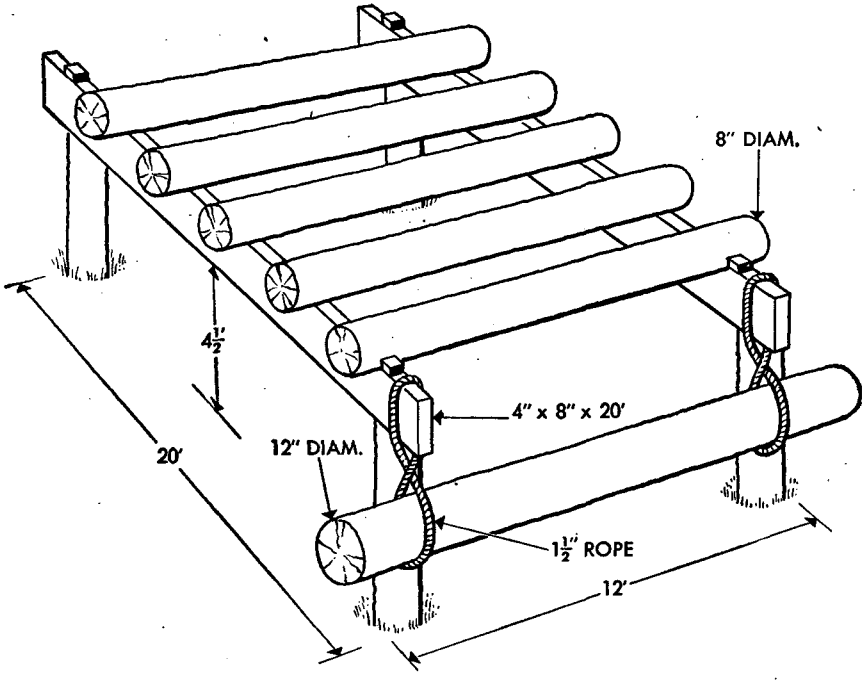

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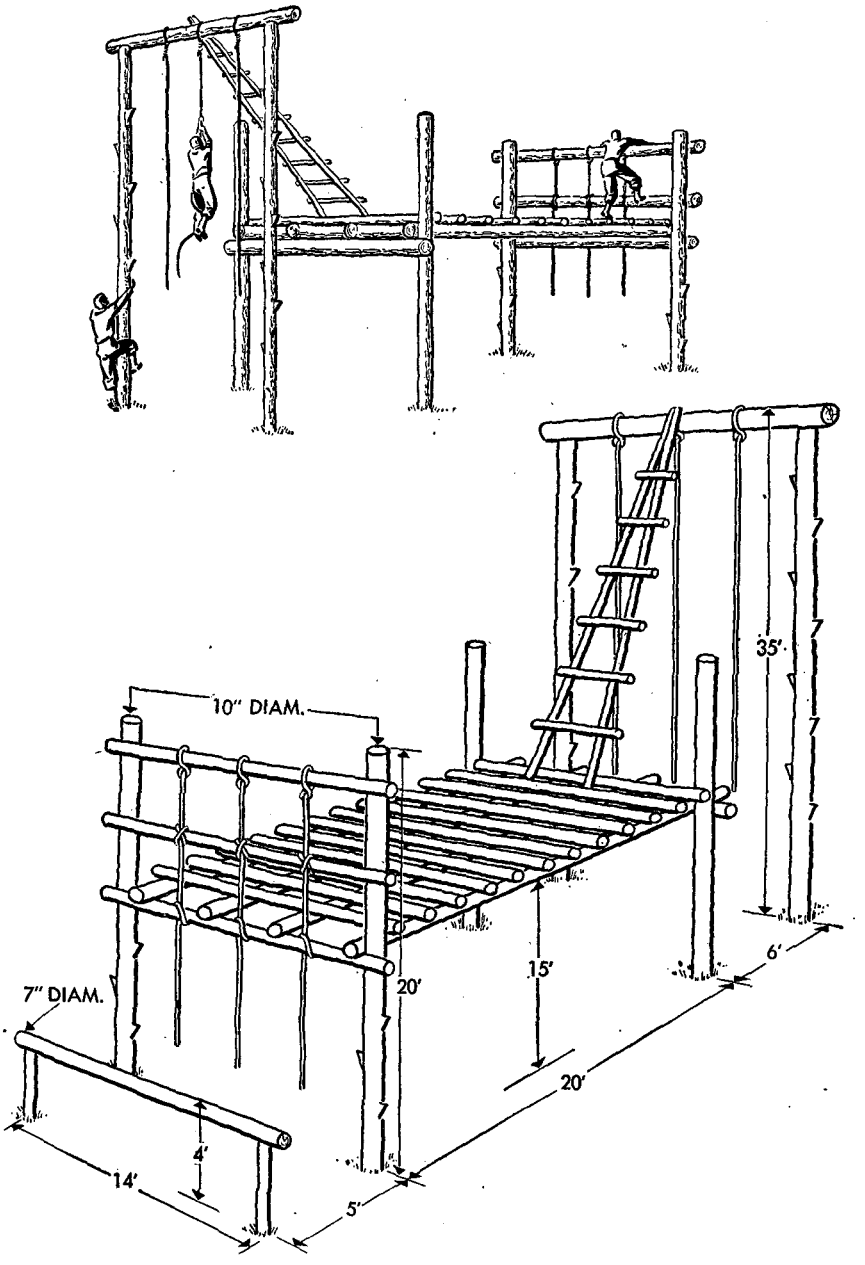

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